Long Range Access Point

M36

User Manual

V1.0

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1 Product Overview

Thank you for using M36. M36 is a smoking detector liked device and it is a powerful, enhanced, enterprise scale product with 4 multi-functions Access Point, Access Point with WDS function, Repeater, and Mesh. M36 has provided best salutation for SOHO (small business / home business) business. It can help with reducing costs with wired internet/intranet and even the wireless environment.

M36 is easily to install almost anywhere. It supports Power by adapter and Power over Ethernet for hiding indoor installation. Internal diversity antenna provides better coverage of wireless signal.

M36 can manage power level control, Traffic shaping and Real-time RSSI indicator. M36 is fully support of security encryption including Wi-Fi Protected Access (WPA-PSK/WPA2-PSK), 64/128/152-bit WEP Encryption and IEEE 802.1x with RADIUS Accounting.

1.1 Benefits

The following list describes the design of the M36 made possible through the power and flexibility of wireless LANs:

a) **Difficult-to-wire environments**

   There are many situations where wires cannot be laid easily. Historic buildings, older buildings, open areas and across busy streets make the installation of LANs either impossible or very expensive.

b) **Temporary workgroups**

   Consider situations in parks, athletic arenas, exhibition centers, disaster-recovery, temporary offices and construction sites where one wants a temporary WLAN established and removed.

c) **The ability to access real-time information**

   Doctors/nurses, point-of-sale employees, and warehouse workers can access real-time information while dealing with patients, serving customers and processing information.

d) **Frequently changed environments**

   Show rooms, meeting rooms, retail stores, and manufacturing sites where frequently rearrange the workplace.

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e) Wireless extensions to Ethernet networks

Network managers in dynamic environments can minimize the overhead caused by moves, extensions to networks, and other changes with wireless LANs.

f) Wired LAN backup

Network managers implement wireless LANs to provide backup for mission-critical applications running on wired networks.

g) Training/Educational facilities

Training sites at corporations and students at universities use wireless connectivity to ease access to information, information exchanges, and learning.

Benefits	
High Speed Data Rate Up to 108Mbps	Capable of handling heavy data payloads such as MPEG video streaming
High Output Power up to 28 dBm	Extended excellent Range and Coverage
IEEE 802.11b/g Compliant	Fully Interoperable with IEEE 802.11b/IEEE 802.11g compliant devices
Watertight and Weatherproof	Avoid water invaded and weather corroded for outdoor environment
Wall mount and mast mounting kit support	Building on indoor environment easily.
Internal smart antenna	Diversity antenna gives better coverage of wireless signal for indoor environment.
4 Multi-Function	Users can use different mode in various environment
Point-to-point, Point-to-multipoint Wireless Connectivity	Let users transfer data between two buildings or multiple buildings
Support RSSI Indicator	Access Point will show the signal quality for each client.
Power-over-Ethernet	Flexible Access Point locations and cost savings. M36 must uses the adapter provided in the package.
Support Multi-SSID function (4 SSID) in AP mode	Allow clients to access different networks through a single access point and assign different policies and functions for each SSID by manager
WPA2/WPA/ WEP/ IEEE 802.1x support	Fully support all types of security types.
MAC address filtering in AP mode	Ensures secure network connection
SNMP Remote Configuration Management	Help administrators to remotely configure or manage the Access Point easily.
QoS (WMM) support	Enhance user performance and density

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High Speed Data Rate Up to 108Mbps	Capable of handling heavy data payloads such as MPEG video streaming

1.2 Feature

Access Point Mode	Use this feature to setup the access point's configuration information. It has support adjusting transmit power and channel. Client can access the network with different regulatory settings and automatically change to the local regulations.
Repeater Mode	Use this feature to extend the wireless signal coverage area.
Mesh Mode	Use this feature to establish a NET type of network. Mesh can reduce the cost of the T1 and xDSL wired network. If one path of the network is broken or blocked, the transmission is automatically find the best path to the destination.
Multiple SSIDs	M36 supports up to 4 SSIDs on your access point. The following options can be set to each SS to each SSID: - SSID for public or private network - Authentication is fully supported - VLAN identifier - Radius accounting identifier - Profile isolation for infrastructure network
VLAN	Specify a VLAN number for each SSID to separate the services among clients.
QoS	Use this feature to limit the incoming or outgoing throughput.
Wi-Fi Protect Access	Wi-Fi Protect Access is a standard-based interoperable security enhancement that increases the level of data protection and access control for existing and future wireless LAN system. It is compatible with IEEE 802.11i standard WPA leverages TKIP and 802.1X for authenticated key management.

1.3 Package Contents

Open the package carefully, and make sure that none of the items listed below are missing. Do not discard the packing materials, in case of return; the unit must be shipped in its original package.

- 1* Wireless Access Point Multi-Function AP (M36)
- 1* 12V/1A Power Adapter
- 1* Mounting kit
- 1* QIG
- 1* CD (User Manual)

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Auction: Using other Power Adapter than the one included with M36 may cause damage of the device.

1.4 System Requirement

The following conditions are the minimum system requirement.

- A computer with an Ethernet interface and operating under Windows XP, Vista, 7 or Linux.
- Internet Browser that supports HTTP and JavaScript.

1.5 Hardware Overview

MCU	Atheros SoC, 180MHz
Memory	32MB SDRAM
Flash	8MB
Expansion Slots	N/A
Physical Interface	LAN: One 10/100 Fast Ethernet RJ-45 Reset Button Power Jack
LEDs Status	Power/ Status LAN (10/100Mbps) WLAN (Wireless Connection)
Power Requirements	Power Supply: 100 to 240 VDC ± 10%, 50/60 Hz (depends on different countries) Active Ethernet (Power over Ethernet, IEEE802.3af)- 48 VDC/0.375A Device: 12V/1A
Regulation Certifications	FCC Part 15, ETSI 300/328/CE

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2 M36 Multi-Function Instruction Guide

2.1 Access Point

In the Access Point Mode with WDS Function, M36 function likes a central connection for any stations or clients that support IEEE 802.11b/g and SuperG network. Stations and Client must configure the same SSID and Security Password to associate within the range. M36 supports 4 different SSIDs to separate different clients at the same time.

2.2 Access Point with WDS Function

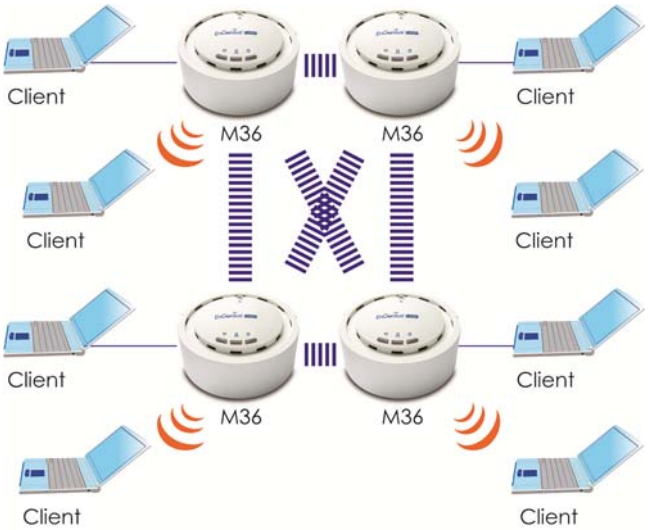
M36 also supports WDS function in Access Point Mode without losing AP's capabilities. Configure others Access Point's Wireless MAC Address in both Access Point devices to enlarge the wireless area by enabling WDS Link Settings. WDS function can support up to 8 different AP's MAC addresses. Auction: Not every Access Point device has support WDS in Access Point Mode. It is recommended using M36 if you would like to use this service.

2.3 Repeater

In the Repeater Mode, the M36 can extend the wireless coverage area of another Access Point or Wireless Router. Access Point or Wireless Router must within the range and M36 must use the same SSID, Security Password and Channel.

2.4 Mesh

In the Mesh Mode, the M36 is act like an independent node and each node is allowed connecting to another network. If one node is lost, the continuous connection through around the broken or blocked by hopping from node to node until the destination is reached. Each node is connected to every other node. Mesh network is similarly to the ad hoc network.



In Mesh Mode, recommended 1 Gateway with 4 Relay Linear and radiative deployment scenario.

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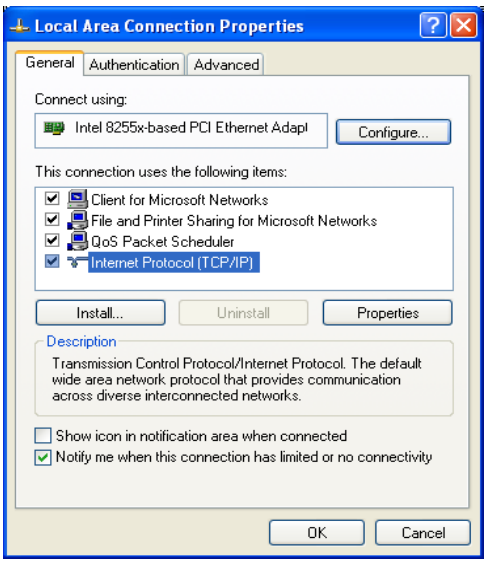
3 Computer Configuration Instruction

3.1 Assign a Static IP

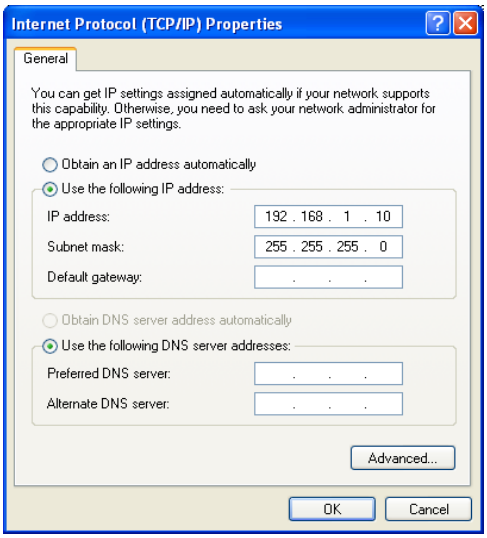
In order to configure M36, please follow the instruction below:

1. In the **Control Panel**, double click **Network Connections** and then double click on the connection of your **Network Interface Card (NIC)**. You will then see the following screen.



2. Select **Internet Protocol (TCP/IP)** and then click on the **Properties** button. This will allow you to configure the TCP/IP settings of your PC/Notebook

3. Select **Use the following IP address** radio button and then enter the IP address and subnet mask. Ensure that the IP address and subnet mask are on the same subnet as the device.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 10
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

4. Click on the **OK** button to close this window, and then close LAN properties window.

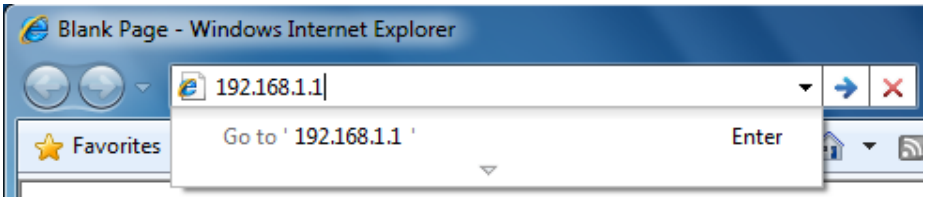
Auction: IP Address entered in the TCP/IP Properties needs to be at the same subnet of the M36 IP Address. For example: M36's default IP Address is **192.168.1.1** so the IP Address in the TCP/IP settings could be **192.168.1.10**.

3.2 Logging Method

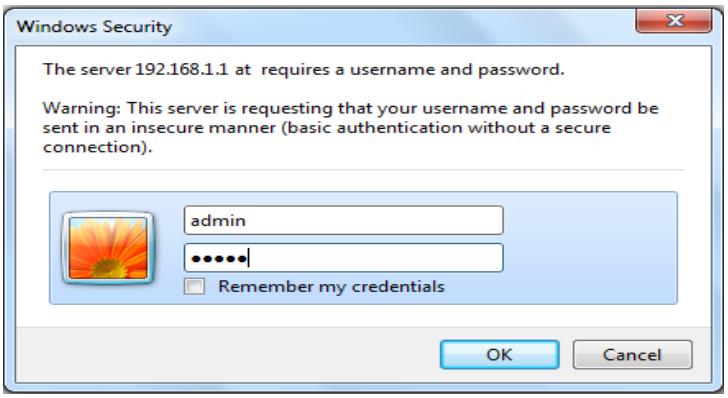
After complete the IP settings from last section, you can now access the web-based configuration menu.

1. Open web browser

2. Enter IP **192.168.1.1** into you address filter.



Auction: If you have changed the M36 LAN IP address, make sure you enter the correct IP Address.


Windows Security
The server 192.168.1.1 at requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
admin
Remember my credentials
OK
Cancel

3. After connected to the M36 successfully, browser will pop out a Windows Security window. Please enter the correct **Username** and **Password**.

4. The default Username and Password are both **admin**.

Auction: If you have changed the Username and Password, please enter your own Username and Password.

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4 Wireless Configuration

4.1 Switching Operation Mode

The M36 supports 4 different operation modes: Access Point, Access Point with WDS Bridge, Repeater, and Mesh.

Click **System Properties** under System Section to begin.

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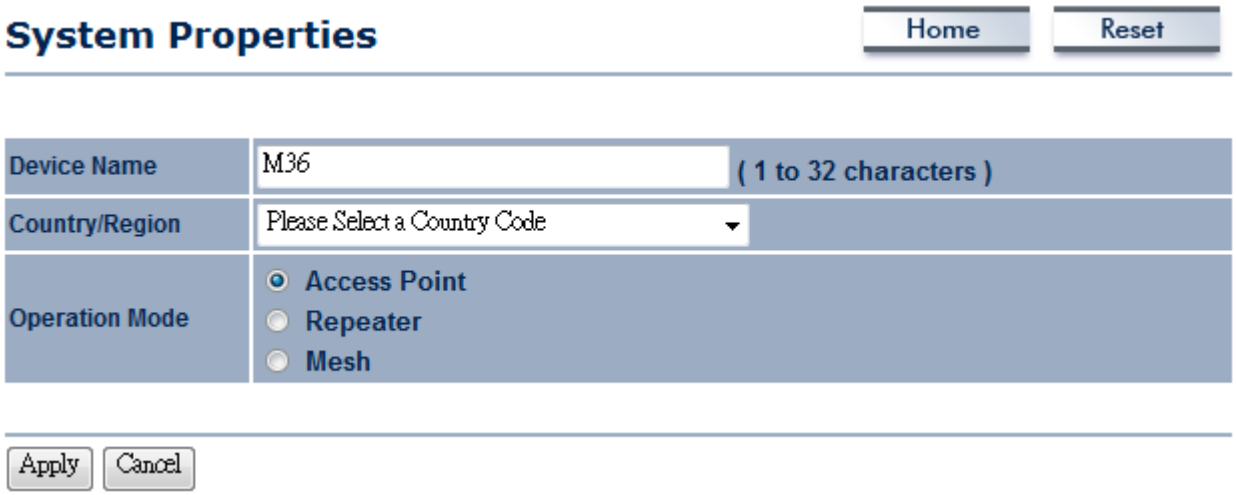

Device Name	Specify a name for the device, but it is not the broadcast SSID. It will be shown in SNMP management
Country/Region	Select a Country/Region to conform local regulation
Operation Mode	Select an operation mode via **Radio Button**

Click **Apply** to save the changed.

Note: If you would like to use Access Point with WDS Function mode, please select Access Point Mode and then enable WDS Link Settings function.

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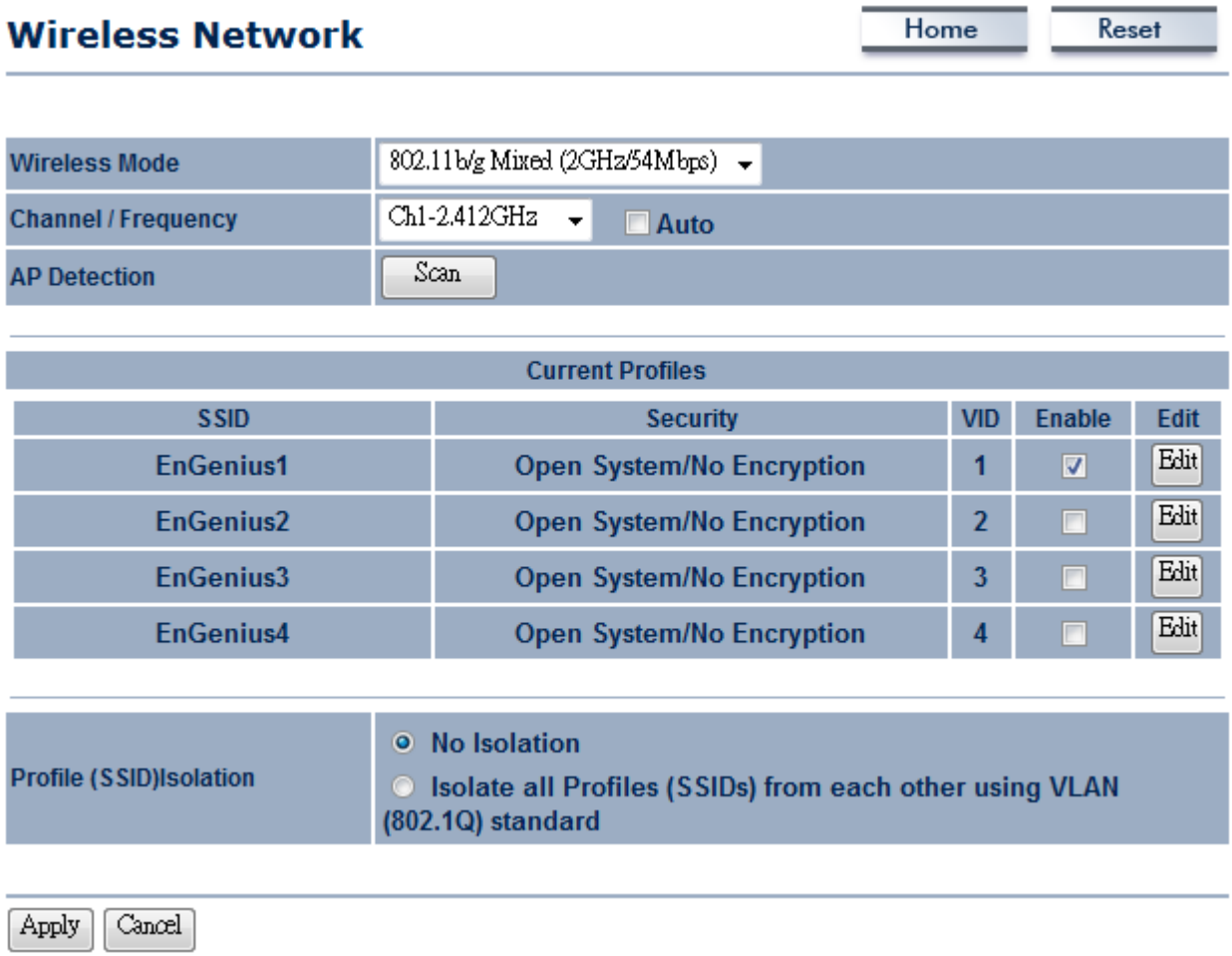
4.2 Wireless Settings

4.2.1 Access Point Mode



Wireless Mode	Select the desired 802.11 standard modes or SuperG mode. There are four different modes and they are 802.11b, 802.11g Only, 802.11 b/g mixed and SuperG.
Channel / Frequency	The channel availability is based on the country's regulation.
Auto	Place a **Check** to enable Auto channel selection.
AP Detection	AP Detection can help to select a best channel by scan nearby area.
Current Profile	Configure up to four different SSIDs, it can help to divide group of clients to access the network. Press **Edit** to configure the profile and place a **Check** to enable extra SSID.
Profile Isolation	Restricted Client to communicate with different VID by Selecting the Radio button.

Auction: SuperG is a special feature in M36. If the client does not support SuperG, it cannot establish a wireless connection successfully.

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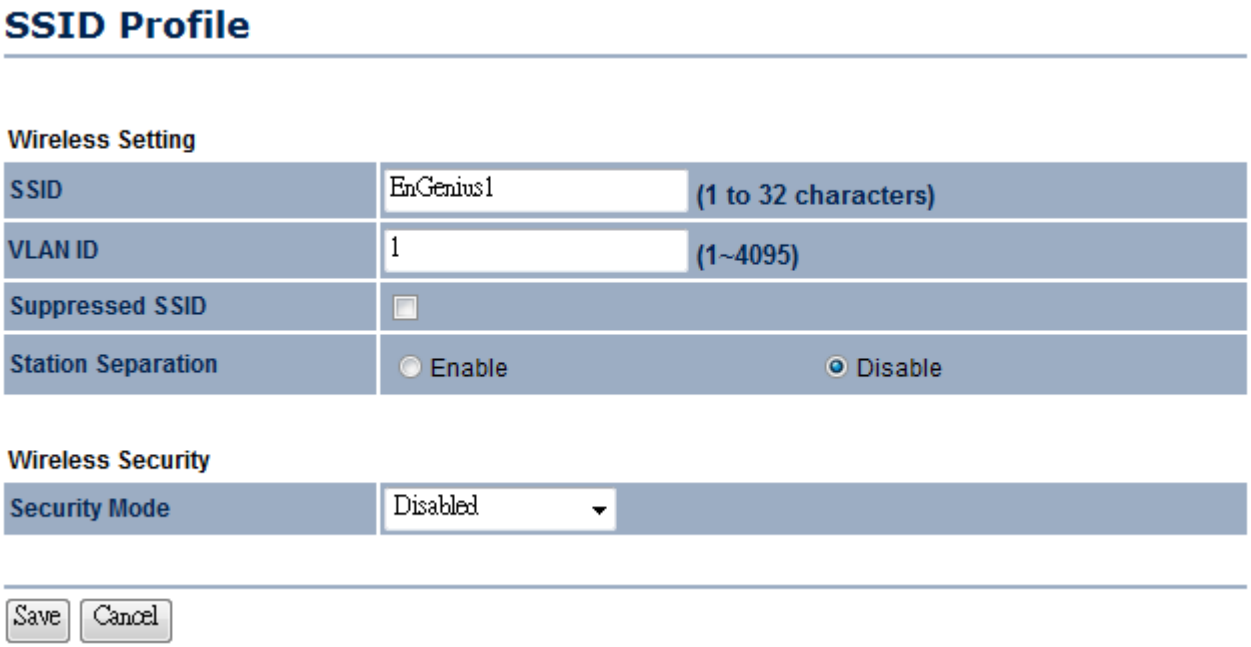

SSID	Specify the SSID for current profile.
VLAN ID	Specify the VLAN tag for current profile.
Suppressed SSID	Place a **Check** to hide the SSID. Client will not be able to see the broadcast SSID in Site Survey.
Station Separation	Select the Radio Button to allow / deny client to communicate each other.
Wireless Security	Please refer to the Wireless Security section.
Save / Cancel	Press **Save** to save the changes or **Cancel** to return previous settings.

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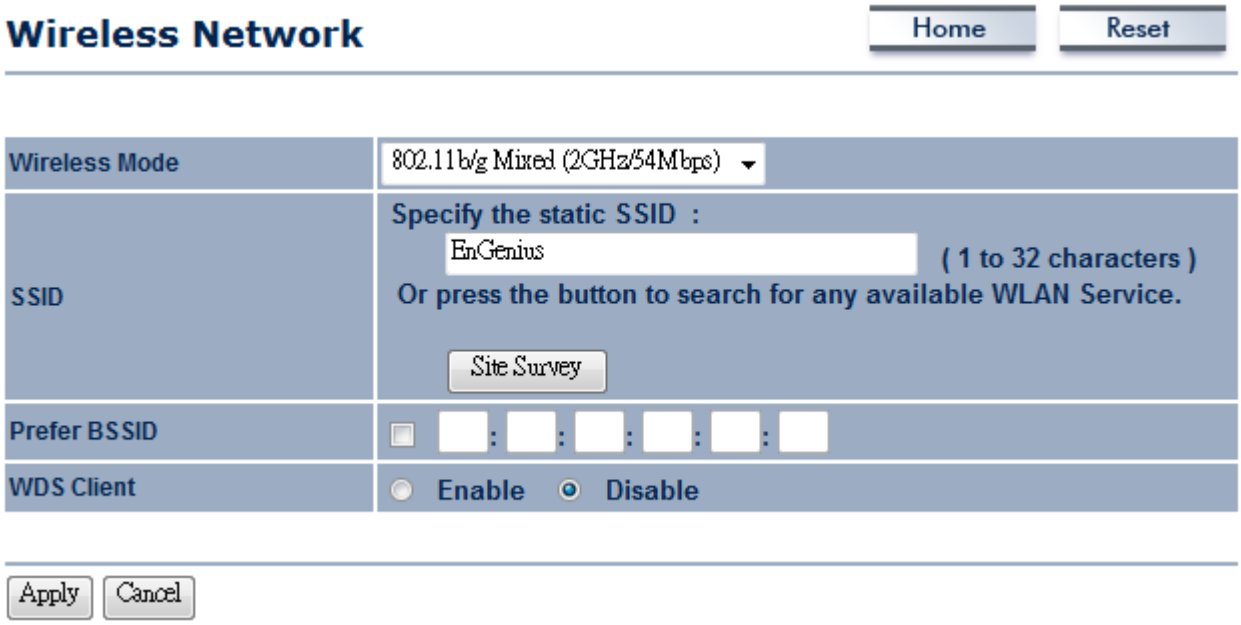
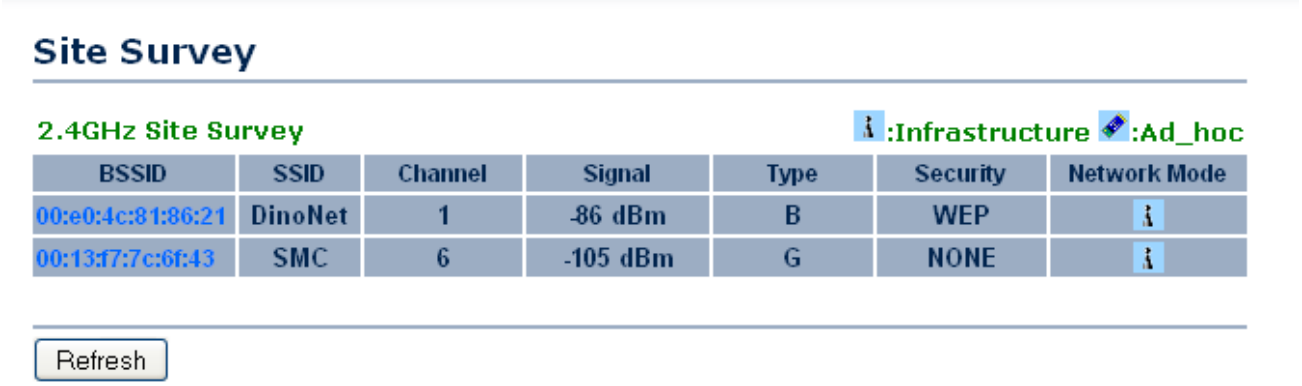
4.2.2 Repeater Mode



Wireless Mode	Select the desired 802.11 standard modes or SuperG mode. There are four different modes and they are 802.11g Only, 802.11 b/g mixed and SuperG.
SSID	Specify the SSID if known. SSID text box will be automatically fill in when select an AP in the Site Survey.
Site Survey	Using Site Survey to scan nearby APs and then select the AP to establish the connection.
Prefer BSSID	Specify the MAC address if known. Prefer BSSID text box will be automatically fill in when select an AP in the Site Survey.
WDS Client	Place a Radio button to Enable / Disable WDS Client.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.



Profile	After Site Survey, webpage will display all nearby area's Access Point. Click the BSSID if you would like to connect with it.

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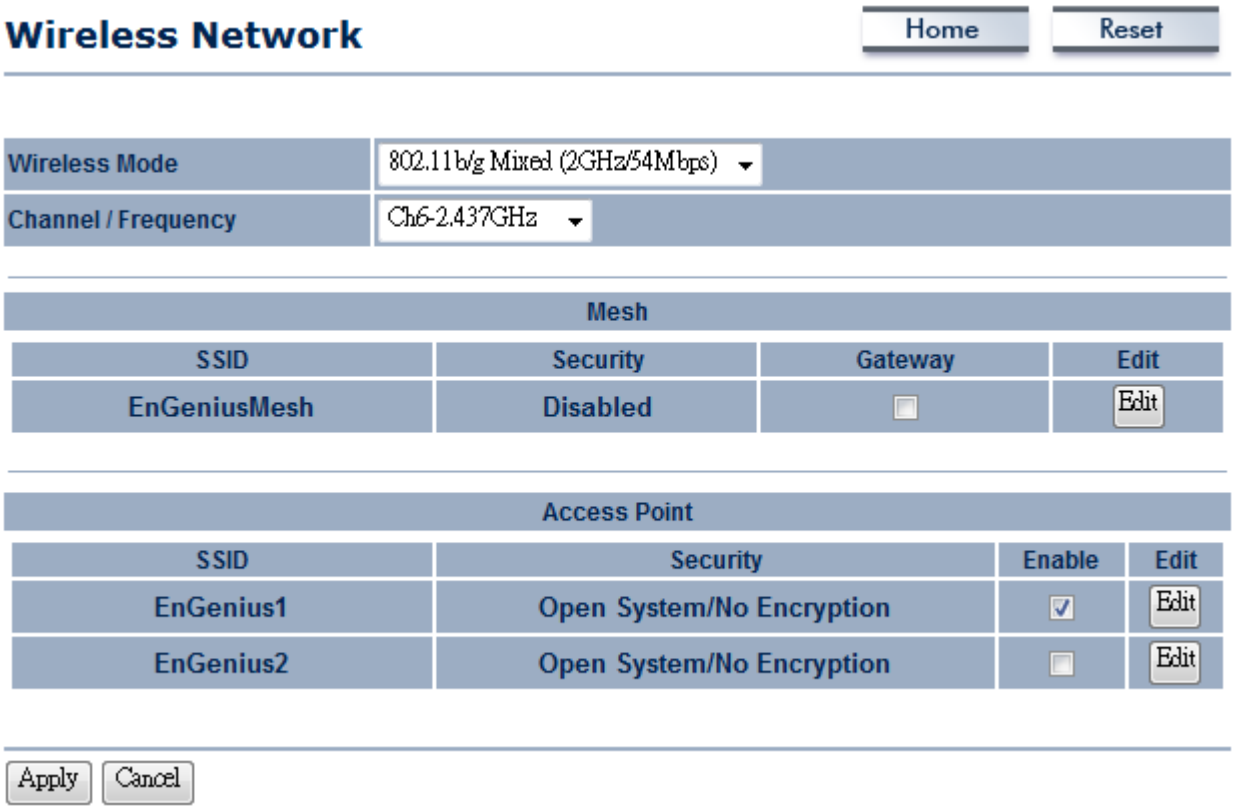
Wireless Security	Please refer to the Wireless Security section.
Refresh	Press Refresh to scan again.

Auction: If the Access Point is suppressed its own SSID, SSID section will be blank, the SSID must be filled in manually.

4.2.3 Mesh Mode



Wireless Mode	Select the desired 802.11 standard modes. There are three different modes and they are 802.11b, 802.11g Only, and 802.11 b/g mixed.
SSID	Specify the SSID if known. SSID text box will be automatically fill in when select an AP in the Site Survey.
Channel / Frequency	The channel availability is based on the country's regulation.
Mesh Profile	Place a **Check** to act like gateway. Press **Edit** to configure the mesh profile and place a **Check** to enable extra SSID.
Access Point Profile	Configure up to two different SSIDs, it can help to divide group of clients to access the network. Press **Edit** to configure the profile and place a **Check** to enable extra SSID.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

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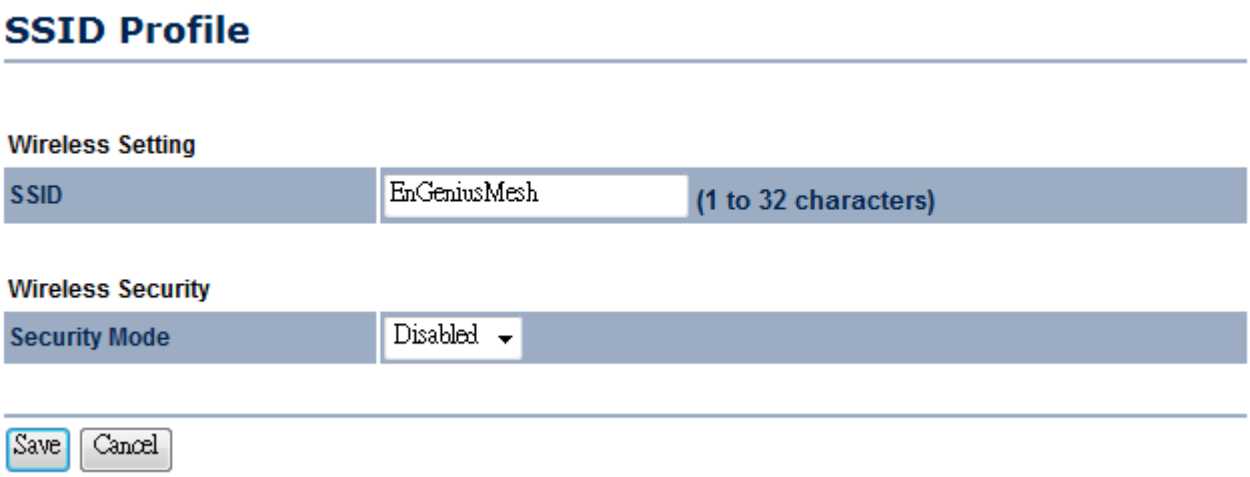
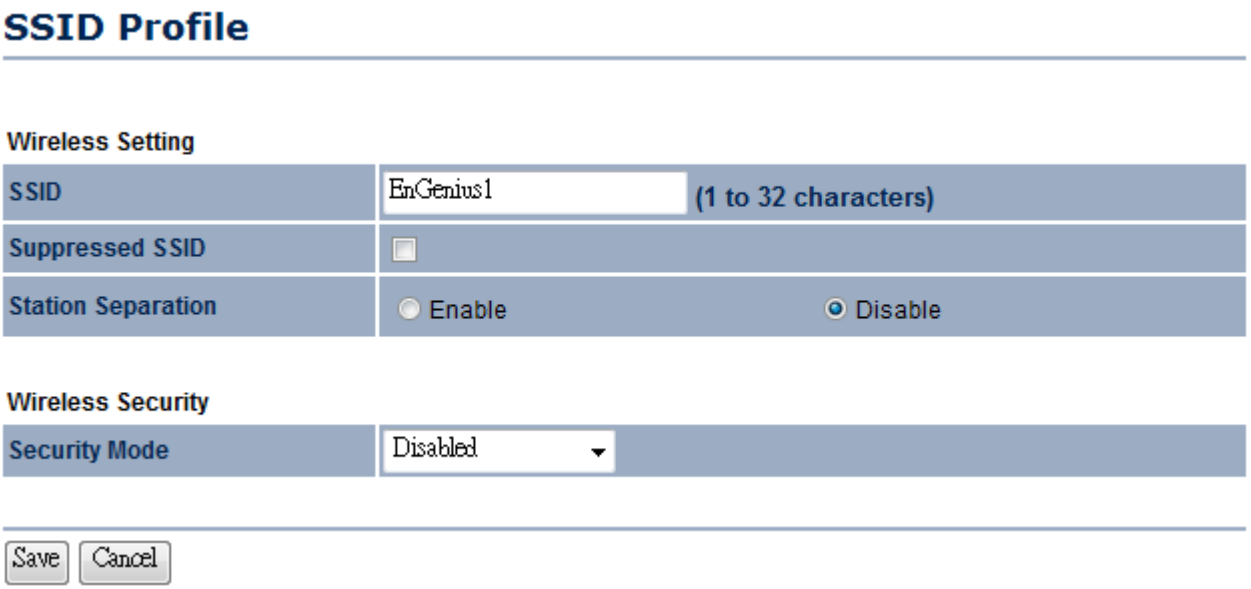
Mesh Profile



SSID	Specify the name of the Mesh networking.
Wireless Security	Please refer to the Wireless Security section.
Save / Cancel	Press **Save** to save the changes or **Cancel** to return previous settings.

Auction: The SSID and security mode must be the same to the Mesh Network otherwise it cannot join the mesh network

Access Point Profile



SSID	Specify the SSID for current profile.
Suppressed SSID	Place a **Check** to hide the SSID. Client will not be able to see the broadcast SSID in Site Survey.
Station Separation	Select the Radio Button to allow / deny client to communicate each other.
Wireless Security	Please refer to the Wireless Security section.
Save / Cancel	Press **Save** to save the changes or **Cancel** to return previous settings.

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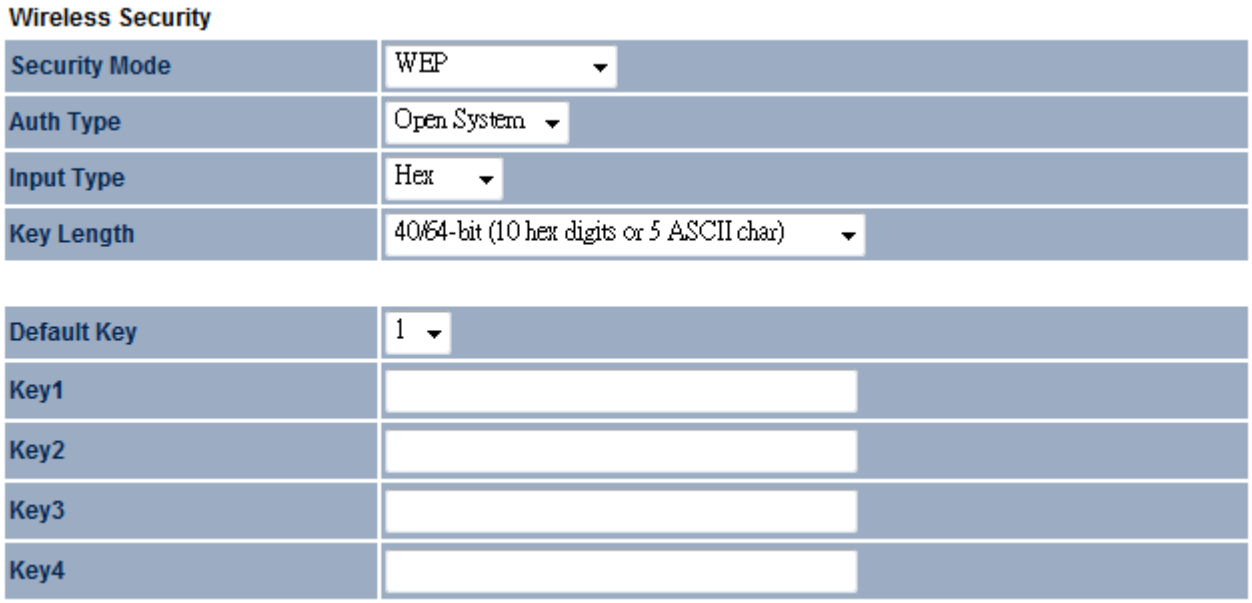
4.3 Wireless Security Settings

Wireless Security Settings section will guide you to the entire Security modes configuration: WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA, WPA2, and WPA Mixed.
We are strongly recommended that uses WPA2-PSK as your security settings.

4.3.1 WEP



Security Mode	Select **WEP** from the drop down list to begin the configuration.
Auth Type	Select Auth Type in **Open System** or **Shared**.
Input Type	Select Input Type in **Hex** or **ASCII**.
Key Length	Select Key Length in 64/128/152 bit password length.
Default Key	Select the default index key for wireless security.
Key1	Specify password for security key index No.1.
Key2	Specify password for security key index No.2.
Key3	Specify password for security key index No.3.
Key4	Specify password for security key index No.4.

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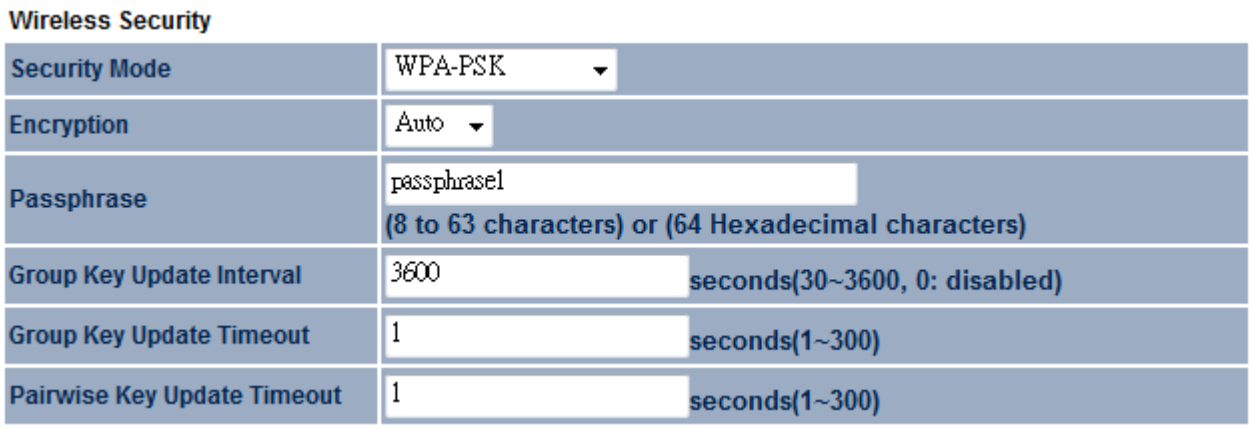
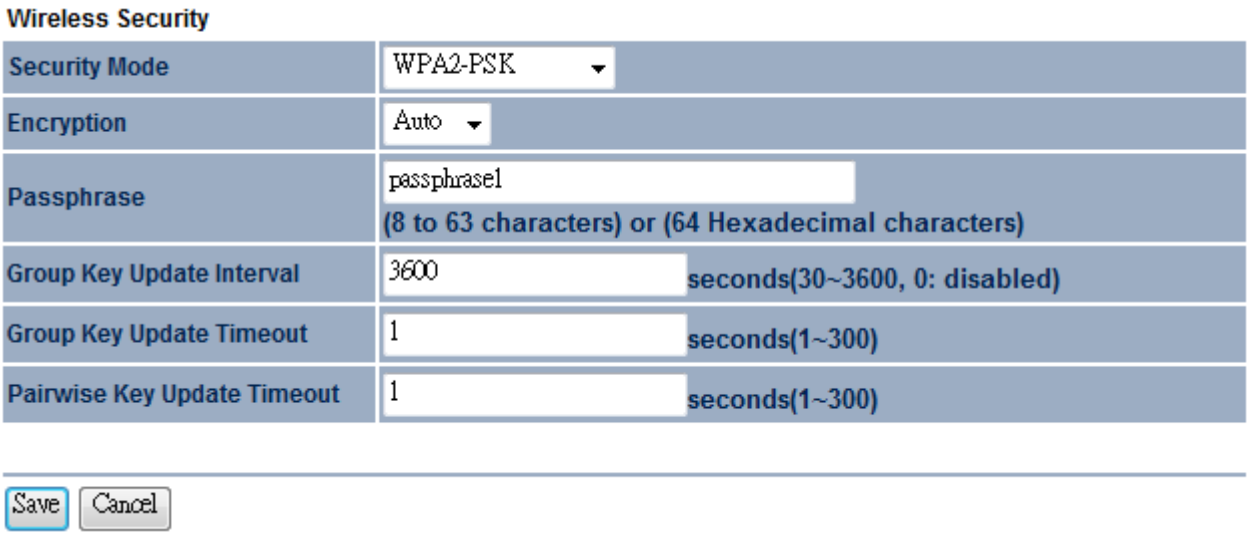
4.3.2 WPA-PSK



Security Mode	Select **WPA-PSK** from the drop down list to begin the configuration.
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Passphrase	Specify the security password.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.

4.3.3 WPA2-PSK



Security Mode	Select **WPA2-PSK** from the drop down list to begin the configuration.

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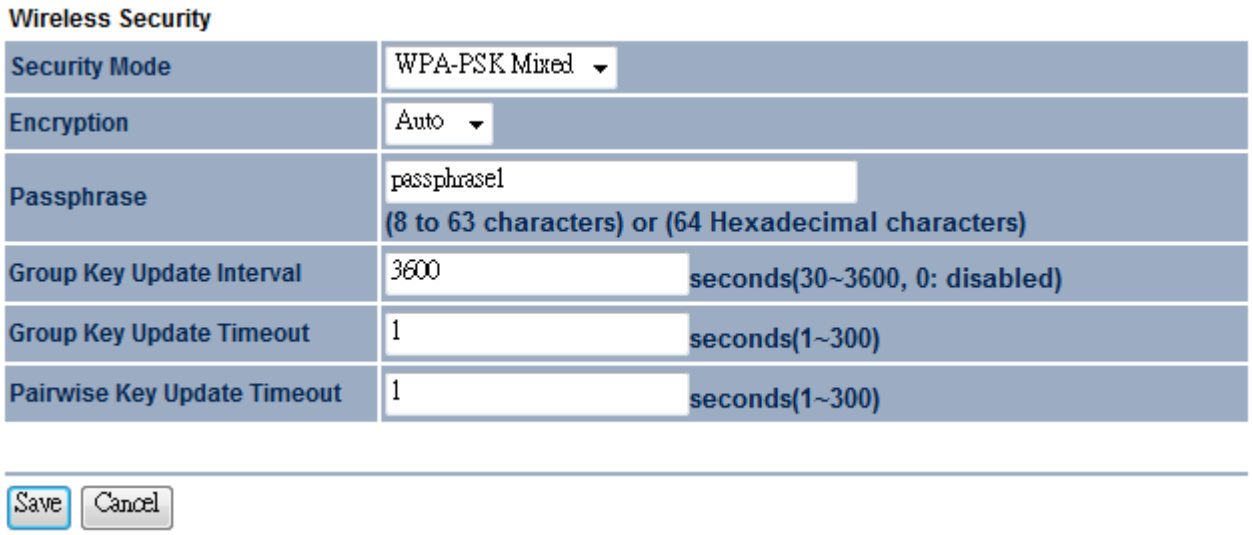
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Passphrase	Specify the security password.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.

4.3.4 WPA-PSK Mixed

WPA-PSK Mixed security type provides flexible way for client to connect to the Access Point. Client can either use WPA-PSK or WPA2-PSK for the security mode.



Security Mode	Select **WPA-PSK Mixed** from the drop down list to begin the configuration.
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Passphrase	Specify the security password.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.

Auction: WPA-PSK Mixed means it allow both WPA-PSK and WPA2-PSK security types to establish wireless connection.

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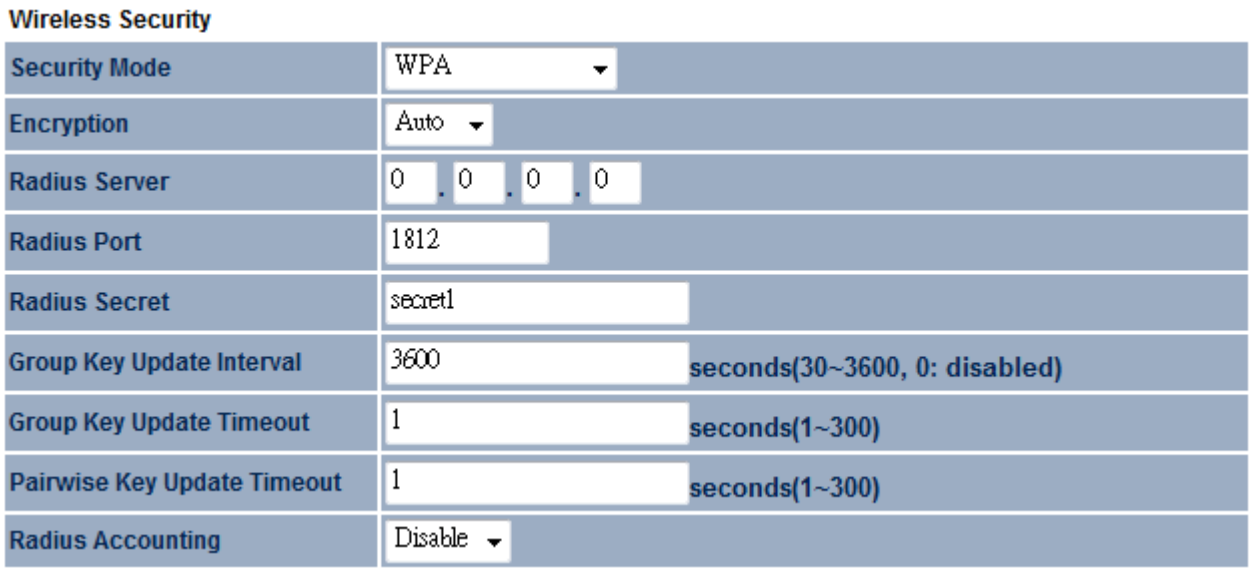
4.3.5 WPA



Security Mode	Select **WPA** from the drop down list to begin the configuration.
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Radius Server	Specify Radius Server IP Address.
Radius Port	Specify Radius Port number, the default port is 1812.
Radius Secret	Specify Radius Secret that is given by the Radius Server.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.
Radius Accounting	Select **Enable** or **Disable** Radius Accounting. The detail of Radius Accounting is at next section.

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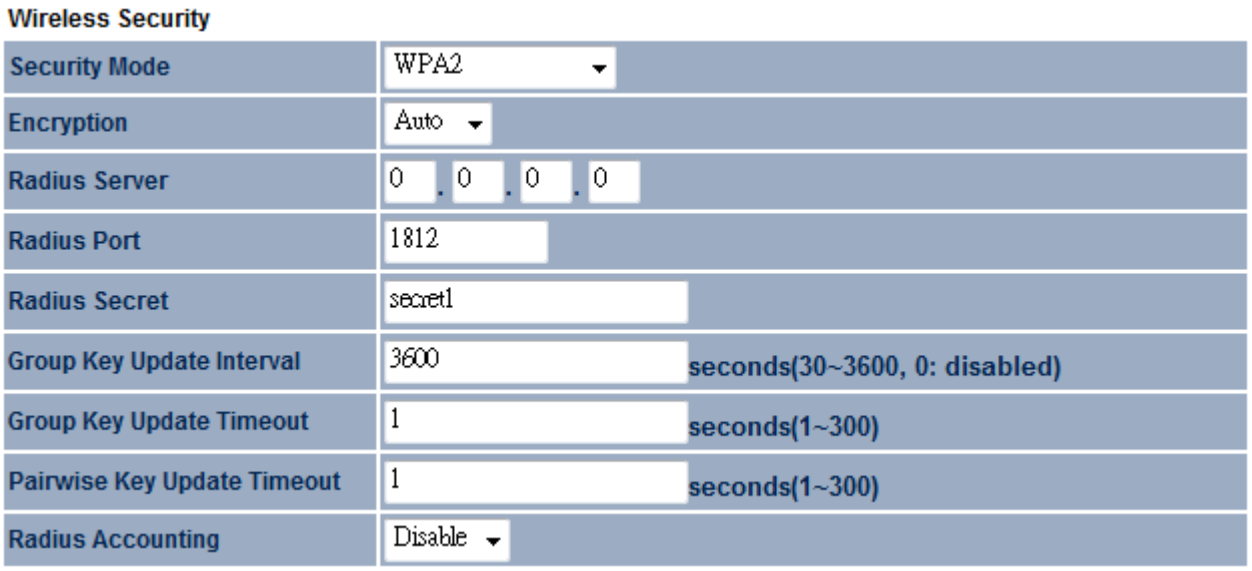
4.3.6 WPA2



Security Mode	Select **WPA2** from the drop down list to begin the configuration.
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Radius Server	Specify Radius Server IP Address.
Radius Port	Specify Radius Port number, the default port is 1812.
Radius Secret	Specify Radius Secret that is given by the Radius Server.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.
Radius Accounting	Select **Enable** or **Disable** Radius Accounting. The detail of Radius Accounting is at next section.

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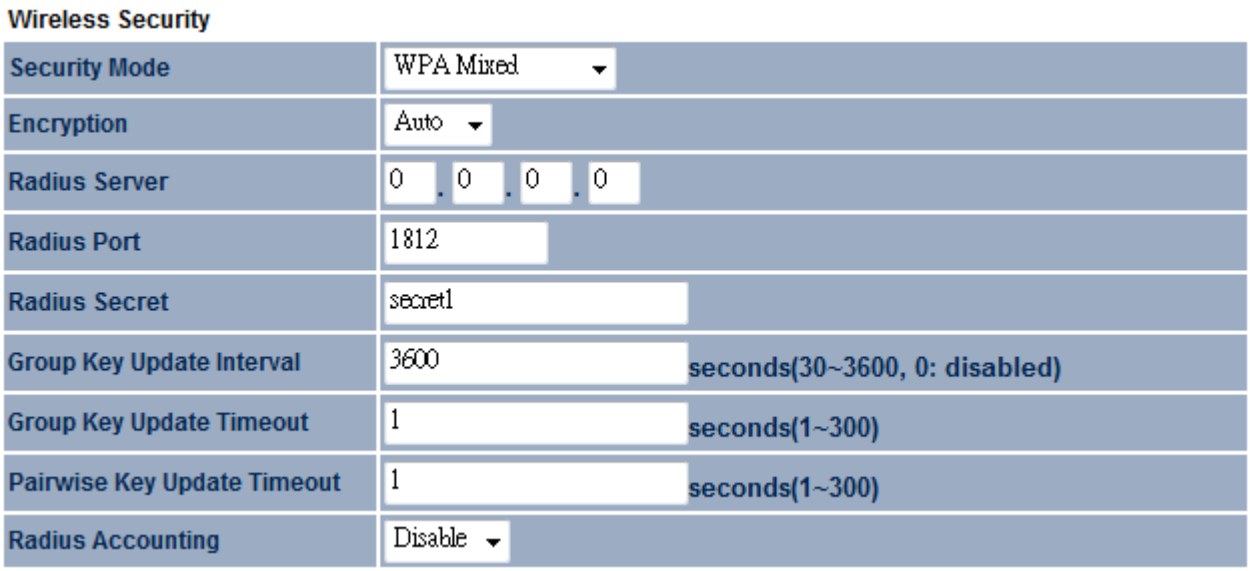
4.3.7 WPA Mixed

WPA Mixed security type provides flexible way for client to connect to the Access Point. Client can either use WPA or WPA2 for the security mode.



Security Mode	Select **WPA Mixed** from the drop down list to begin the configuration.
Encryption	Select **Auto**, **TKIP** or **AES** for Encryption type.
Radius Server	Specify Radius Server IP Address.
Radius Port	Specify Radius Port number, the default port is 1812.
Radius Secret	Specify Radius Secret that is given by the Radius Server.
Group Key Update Interval	Specify Group Key Update Interval time.
Group Key Update Timeout	Specify Group Key Update Timeout time.
Pairwise Key Update Interval	Specify Pairwise Key Update Timeout time.
Radius Accounting	Select **Enable** or **Disable** Radius Accounting. The detail of Radius Accounting is at next section.

Auction: WPA Mixed means it allow both WPA and WPA2 security types to establish wireless connection.

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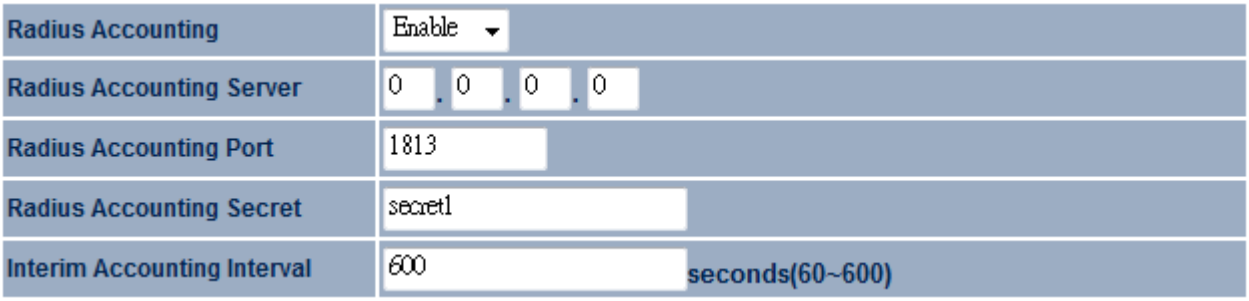
4.3.8 Radius Accounting



Radius Accounting	Select **Enable** to begin configuration of Radius Accounting.
Radius Accounting Server	Specify Radius Accounting Server IP.
Radius Accounting Port	Specify Radius Accounting Server IP. The default port is 1813.
Radius Accounting Secret	Specify Radius Accounting Server Secret that is given by the Radius Accounting Server.
Radius Accounting Interval	Specify Radius Accounting Interval for updating information.

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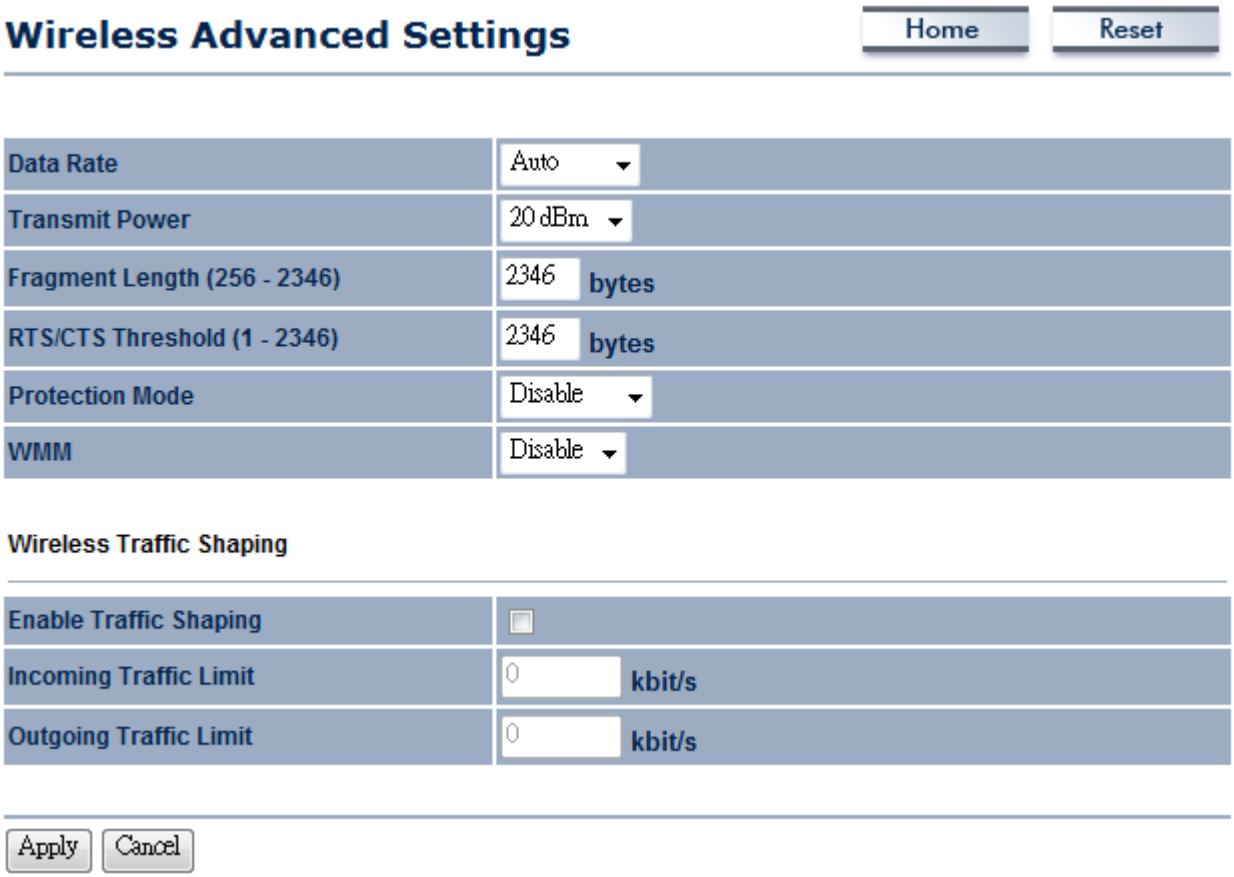
4.4 Wireless Advanced Settings



Data Rate	Select Data Rate from the drop down list. Data rate will affect the efficiency of the throughput. If the data rate is set to a small number, the lower through will get but it can transmit to longer distance.
Transmit Power	Select Transmit Power to increase or decrease Transmit Power. Higher transmit power will sometimes cause unable to connect to the network. On the other hand, the lower transmit power will cause client unable to connect to the device.
Fragment Length	Specify package size during transmission. If large amount of client are accessing to the network, specify small number of the fragment length in order to avoid collision.
RTS/CTS Threshold	Specify Threshold package size for RTC/CTS. Using small number of the threshold will cause RTS/CTS packets to be sent more often to consuming more of the available bandwidth. In addition, if the heavy load traffic occurs, the wireless network can be recovered easily from interferences or collisions.
Protection Mode	Select **Disable** or **Enable** Protection Mode. If there are large amount of error occur during the transmission, please enable the protect mode otherwise protect mode should remain disable.
WMM	Select **Disable** or **Enable** WMM function. WMM is based on the four Access

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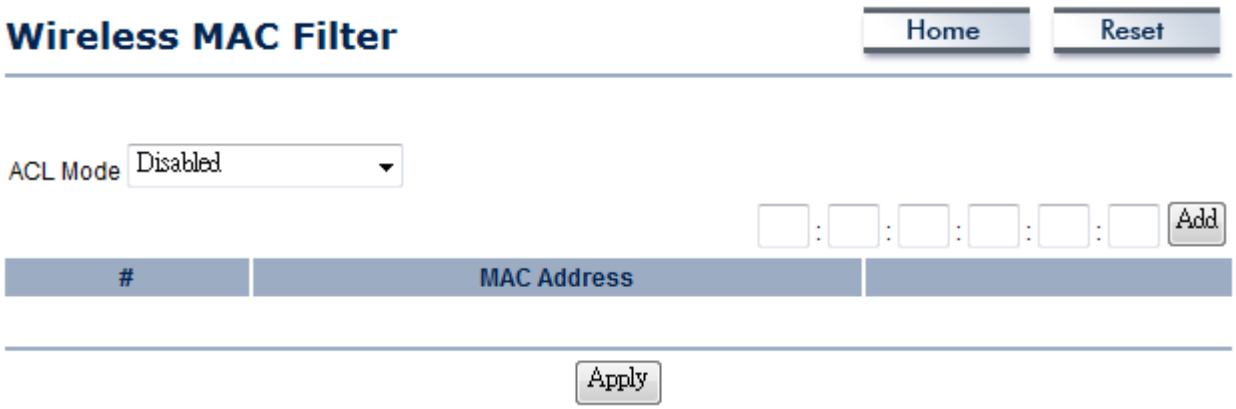
	Categories: voice, video, best effort and background. WMM function is not used to guarantee transmission speed.
Wireless Traffic Shaping	Place a **Check** to enable Wireless Traffic Shaping function.
Incoming Traffic Limit	Specify the wireless transmission speed for downloading.
Outgoing Traffic Limit	Specify the wireless transmission speed for uploading.

Auction: Changing Wireless Advanced Settings may cause insufficient wireless connection quality. Please remain all settings as default unless you have acknowledged all changing that you have made.

4.5 Wireless MAC Filter

Wireless MAC Filters is used to Allow or Deny wireless clients, by their MAC addresses, accessing the Network. You can manually add a MAC address to restrict the permission to access M36. The default setting is Disable Wireless MAC Filters.



0.

ACL Mode	ACL Mode can help to deny or allow certain Client to access the network. Select Disable, Deny MAC in the list or Allow MAC in the list from the drop down list.
MAC Address Filter	Specify the MAC address manually.
Add	Press **Add** to add the MAC address in the table.
Apply	Press **Apply** to apply the changes.

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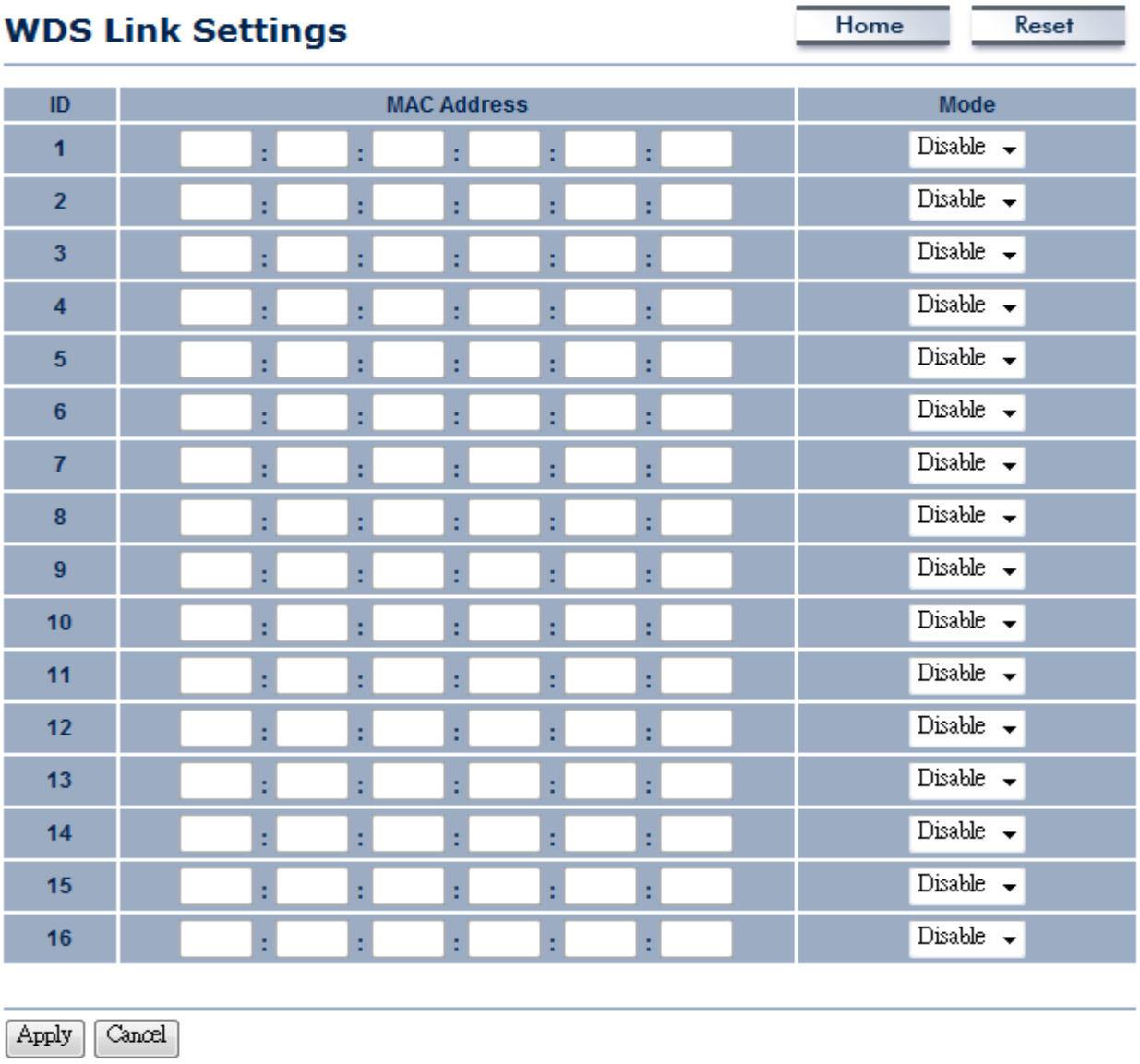
4.6 WDS Link Settings

WDS Link Settings is used to establish a connection between Access Points but the device is not losing Access Point function. AP has WDS function can extend the wireless coverage and allow LANs to communicate each other.


WDS Link Settings
Home
Reset
ID
MAC Address
Mode
1 : : : : : Disable
2 : : : : : Disable
3 : : : : : Disable
4 : : : : : Disable
5 : : : : : Disable
6 : : : : : Disable
7 : : : : : Disable
8 : : : : : Disable
9 : : : : : Disable
10 : : : : : Disable
11 : : : : : Disable
12 : : : : : Disable
13 : : : : : Disable
14 : : : : : Disable
15 : : : : : Disable
16 : : : : : Disable
Apply
Cancel

MAC Address	Enter the Access Point's MAC address that you would like to extend the wireless area.
Mode	Select Disable or Enable from the drop down list.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

Auction: The Access Point that you would like to extend the wireless area must enter your Access Point's MAC address. Not all Access Point supports this feature.

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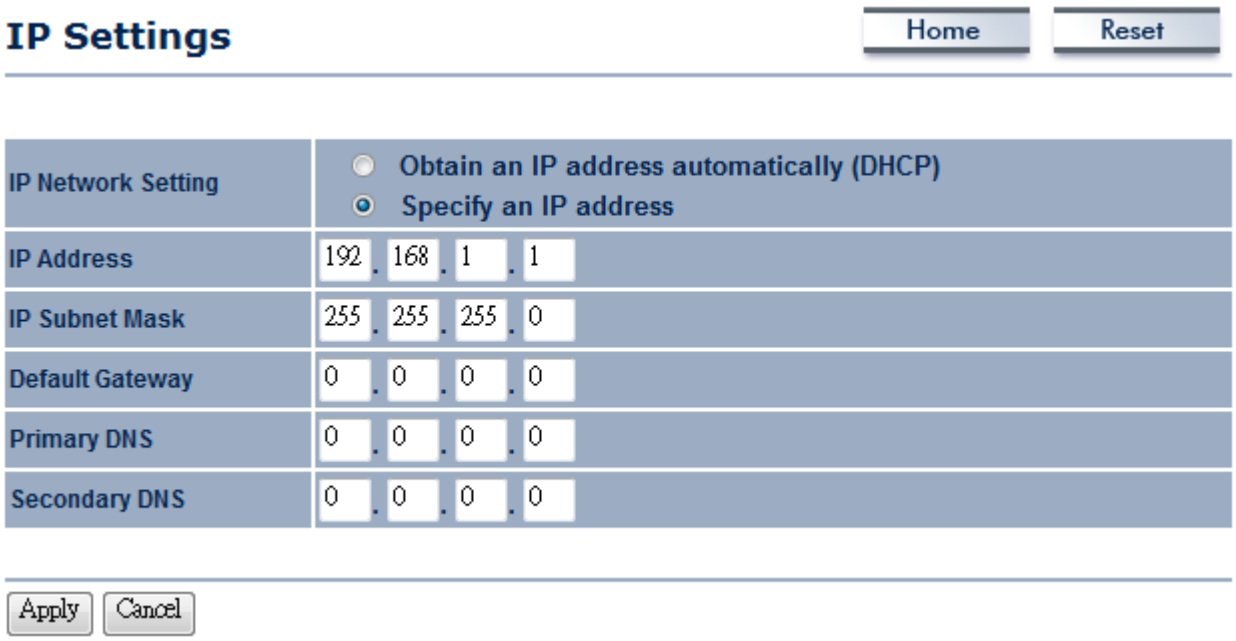
5 LAN Setup

This section will guide you to the Local Area Network (LAN) settings

5.1 IP Settings

This section is only available for **Non-Router Mode**. IP Settings allows you to LAN port IP address of the M36.

Auction: Changing LAN IP Address will change LAN Interface IP address. Webpage will automatically redirect to the new IP address after Apply.



IP Network Setting	Select Radio button for **Obtain an IP address automatically** or **Specify an IP address**.
IP Address	Specify LAN port IP address.
IP Subnet Mask	Specify Subnet Mask.
Default Gateway	Specify Default Gateway
Primary DNS	Specify Primary DNS
Secondary DNS	Specify Secondary DNS
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

Auction: Obtain an IP address automatically is not a DHCP server. It means automatically get IP address when device connected to a device which has DHCP server.

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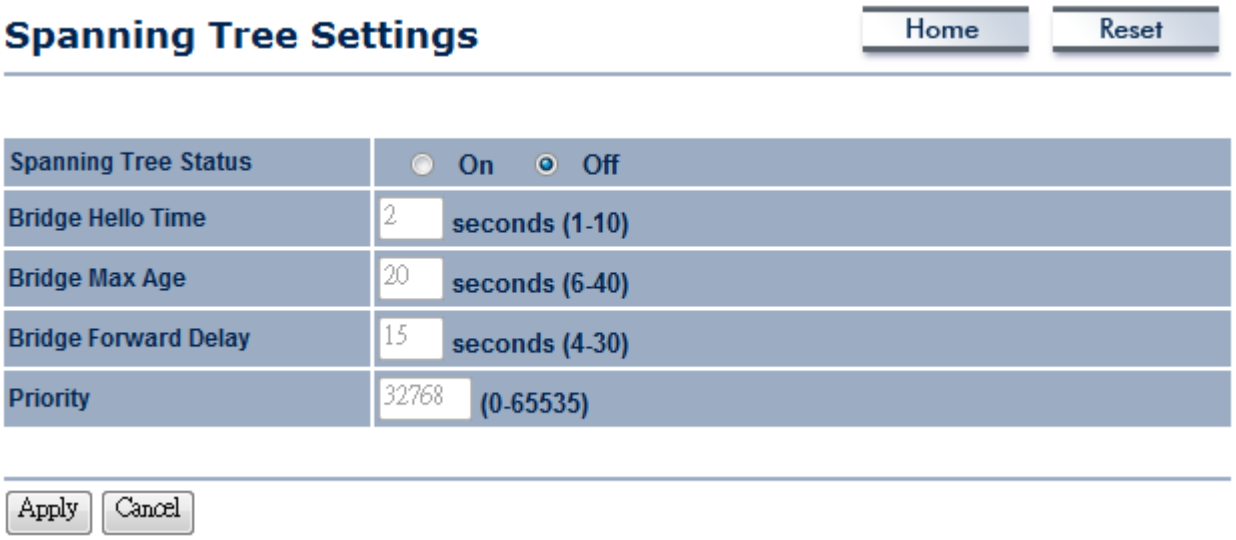
5.2 Spanning Tree Settings



Spanning Tree Status	Select the Radio button to On or Off Spanning Tree function.
Bridge Hello Time	Specify Bridge Hello Time in second.
Bridge Max Age	Specify Bridge Max Age in second.
Bridge Forward Delay	Specify Bridge Forward Delay in second.
Priority	Specify the Priority number. Smaller number has greater priority.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

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6 Information Status

Status section is on the navigation drop-down menu. You will then see three options: Main, Wireless Client List, System Log, WDS Link Status, Connection Status, and DHCP Client Table. Each option is described in detail below.

6.1 Main

Click on the **Main** link under the **Status** drop-down menu or click **Home** from the top-right of the webpage. The status that is displayed corresponds with the operating mode that is selected. Information such as operating mode, system up time, firmware version, serial number, kernel version and application version are displayed in the 'System' section. LAN IP address, subnet mask, and MAC address are displayed in the 'LAN' section. In the 'Wireless section, the frequency, channel is displayed. Since this device supports multiple-SSIDs, the details of each SSID, such as ESSID and its security settings are displayed.

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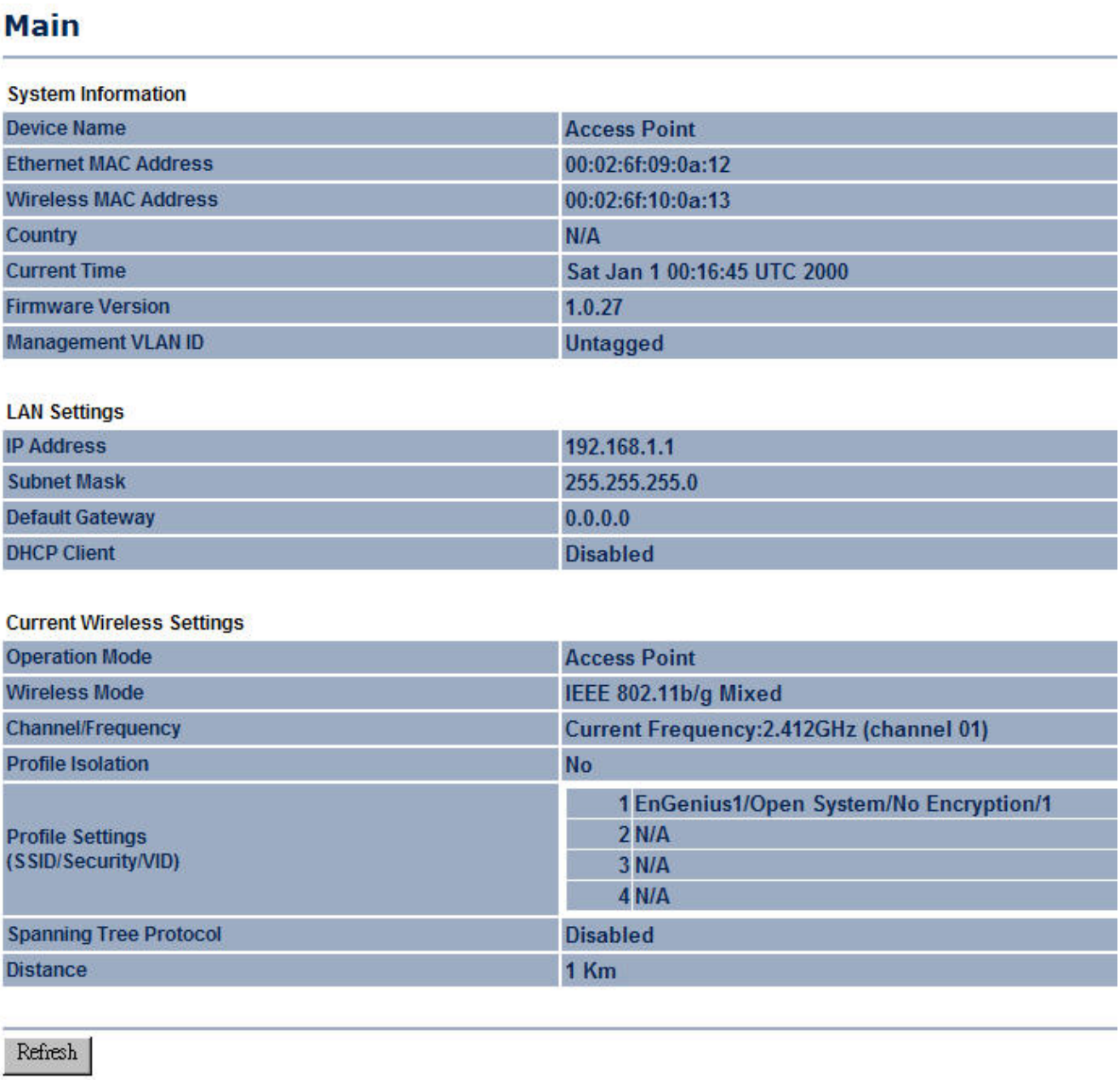

6.2 Wireless Client List

Click on the **Wireless Client List** link under the **Status** drop-down menu. This page displays the list of Clients that are associated to the M36.

The MAC addresses and signal strength for each client is displayed. Click on the **Refresh** button to refresh the client list

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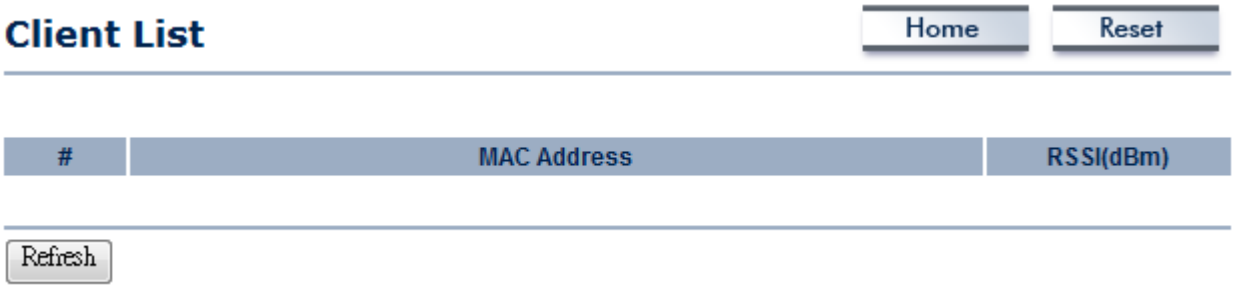
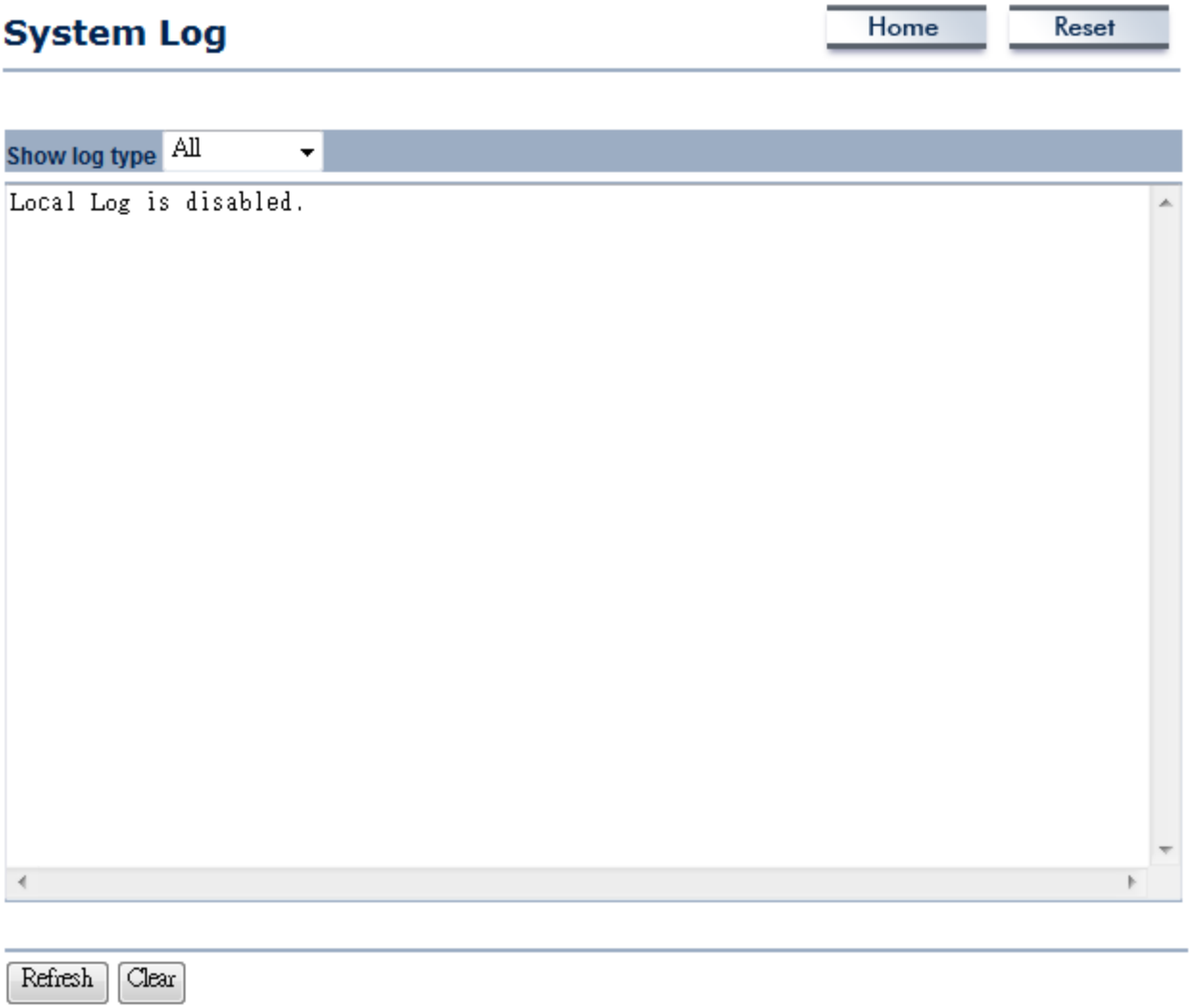


6.3 System Log

Click on the **System Log** link under the **Status** drop-down menu. The device automatically logs (records) events of possible interest in its internal memory. If there is not enough internal memory for all events, logs of older events are deleted, but logs of the latest events are retained.



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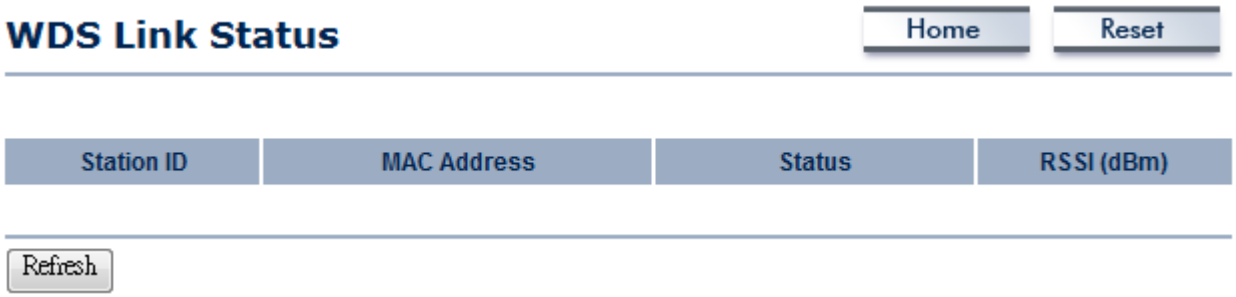
6.4 WDS Link Status

The WDS Link Status will only show in WDS Bridge Mode. Click on the **WDS Link Status** link under the **Status** drop-down menu. This page displays the current status of WDS link, including station ID, MAC address, status and RSSI.



6.5 Connection Status

Click on the **Connection Status** link under the **Status** drop-down menu. This page displays the current status of the network, including network type, SSID, BSSID, connection status, wireless mode, current channel, security, data rate, noise level and signal strength.

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Wireless

Network Type	Client Router
SSID	EnGenius
BSSID	N/A
Connection Status	N/A
Wireless Mode	N/A
Current Channel	N/A
Security	N/A
Tx Data Rate(Mbps)	N/A
Current noise level	N/A
Signal strength	N/A

WAN

MAC Address	00:02:6f:75:9f:a8
Connection Type	Static IP
Connection Status	Down
IP Address	
IP Subnet Mask	0.0.0.0

Refresh

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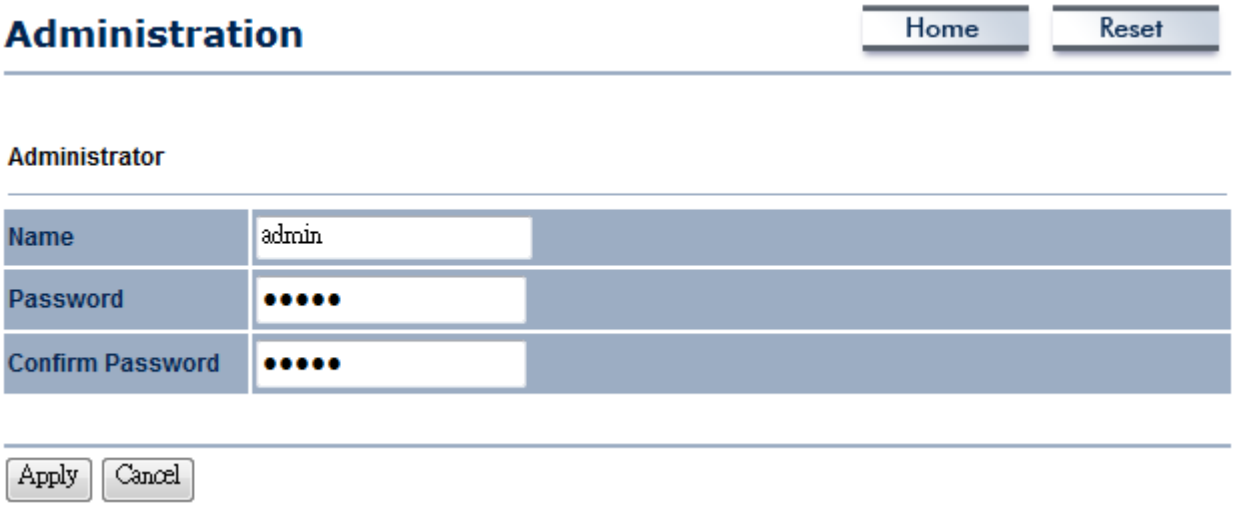
7 Management Settings

Management section is on the navigation drop-down menu. You will then see seven options: administration, management VLAN, SNMP settings, backup/restore settings, firmware upgrade, time settings, and log. Each option is described below.

7.1 Administration

Click on the **Administration** link under the **Management** menu. This option allows you to create a user name and password for the device. By default, this device is configured with both user name and password are **admin**. For security reasons it is highly recommended that you create a new user name and password.



Name	Specify Username for login.
Password	Specify a Password for login
Confirm Password	Re-enter the Password for confirmation.

7.2 Management VLAN

Click on the **Management VLAN** link under the **Management** menu. This option allows you to assign a VLAN tag to the packets. A VLAN is a group of computers on a network whose software has been configured so that they behave as if they were on a separate Local Area Network (LAN). Computers

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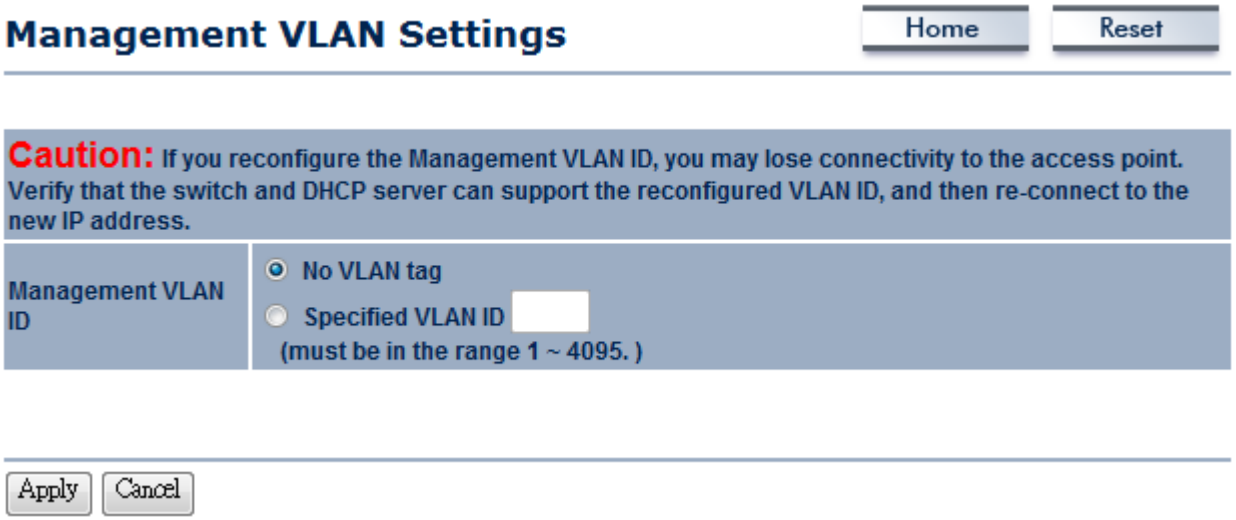
on VLAN do not have to be physically located next to one another on the LAN


Management VLAN Settings
Home
Reset
Caution: If you reconfigure the Management VLAN ID, you may lose connectivity to the access point. Verify that the switch and DHCP server can support the reconfigured VLAN ID, and then re-connect to the new IP address.
Management VLAN ID
No VLAN tag
Specified VLAN ID
(must be in the range 1 ~ 4095.)
Apply
Cancel

Management VLAN ID	If your network includes VLANs and if tagged packets need to pass through the Access Point, specify the VLAN ID into this field. If not, select the **No VLAN tag** radio button.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

Auction: If you reconfigure the Management VLAN ID, you may lose connection to the M36. Verify DHCP server can support the reconfigured VLAN ID, and then re-connect to the new IP address.

7.3 SNMP Settings

Click on the **SNMP Settings** link under the **Management** menu. This is a networking management protocol used to monitor network-attached devices. SNMP allows messages (called protocol data units) to be sent to various parts of a network. Upon receiving these messages, SNMP-compatible devices (called agents) return data stored in their Management Information Bases.

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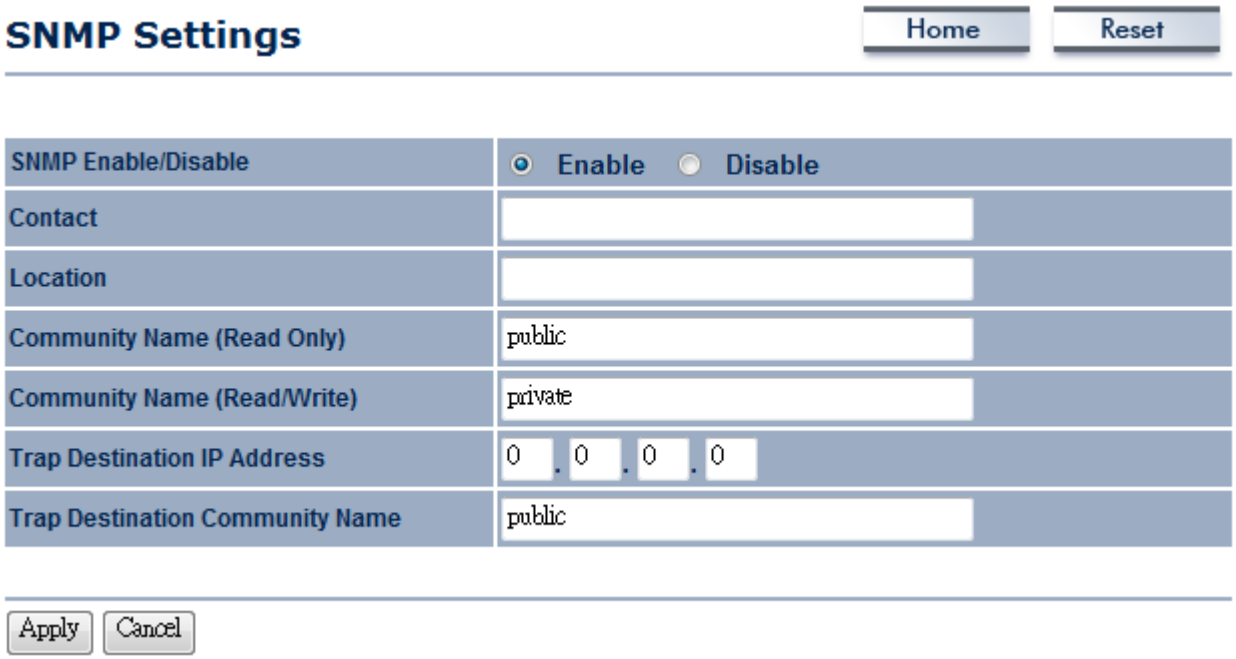

SNMP Enable/Disable	Select the Radio button to Enable or Disable SNMP function.
Contact	Specify the contact details of the device. This option is only seen on the management tools.
Location	Specify the location of the device. This option is only seen on the management tools.
Community Name	Specify the password for access the SNMP community for read only access.
Community Name	Specify the password for access the SNMP community for read and write access.
Trap Destination IP Address	Specify the IP address that will receive the SNMP trap.
Trap Destination Community Name	Specify the password of the SNMP trap community.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

7.4 Backup/Restore Settings

Click on the **Backup/Restore Setting** link under the **Management** menu. This option is used to save the current settings of the device in a file on your local disk or load settings on to the device from a local disk. This feature is very handy for administrators who have several devices that need to be configured with the same settings.

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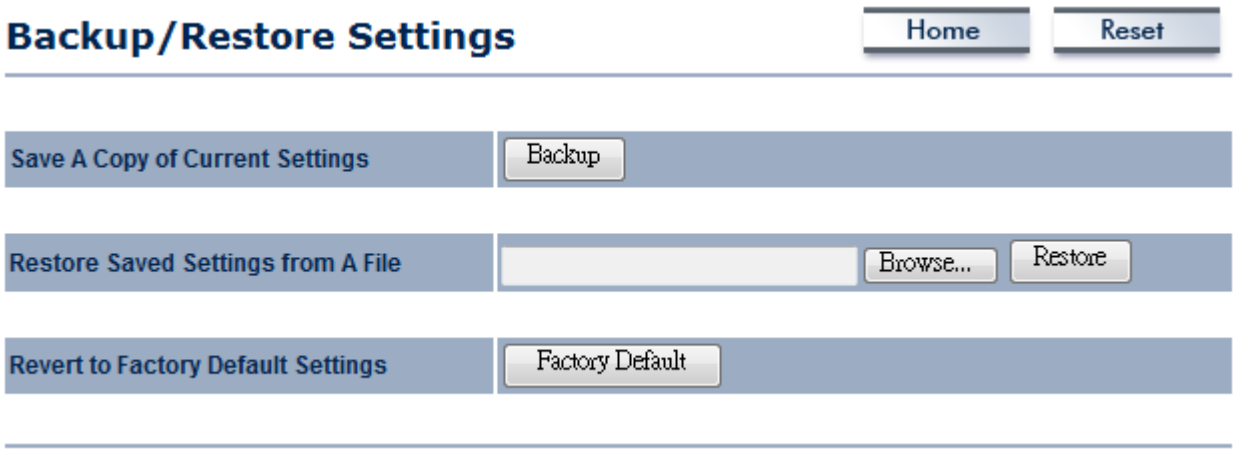
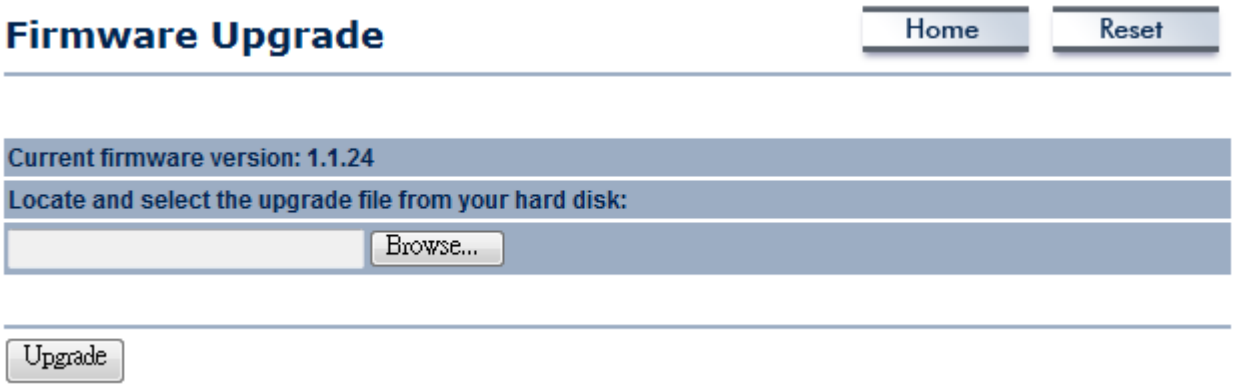


Save A Copy of Current Settings	Click on **Backup** to save current configured settings.
Restore Saved Settings from a File	M36 can restore a previous setting that has been saved. Click on Browse to select the file and Restore.
Revert to Factory Default Settings	Click on Factory Default button to reset all the settings to the default values.

7.5 Firmware Upgrade

Click on the **Firmware Upgrade** link under the **Management** menu. This page is used to upgrade the firmware of the device. Make sure that downloaded the appropriate firmware from your vendor.



Auction: Upgrade process may take few minutes, please do not power off the device and it may cause the device crashed or unusable. M36 will restart automatically once the upgrade is completed.

7.6 Time Settings

Click on the **Time Settings** link under the **Management** menu. This page allows you to configure the time on the device. You may do this manually or by connecting to a NTP server.

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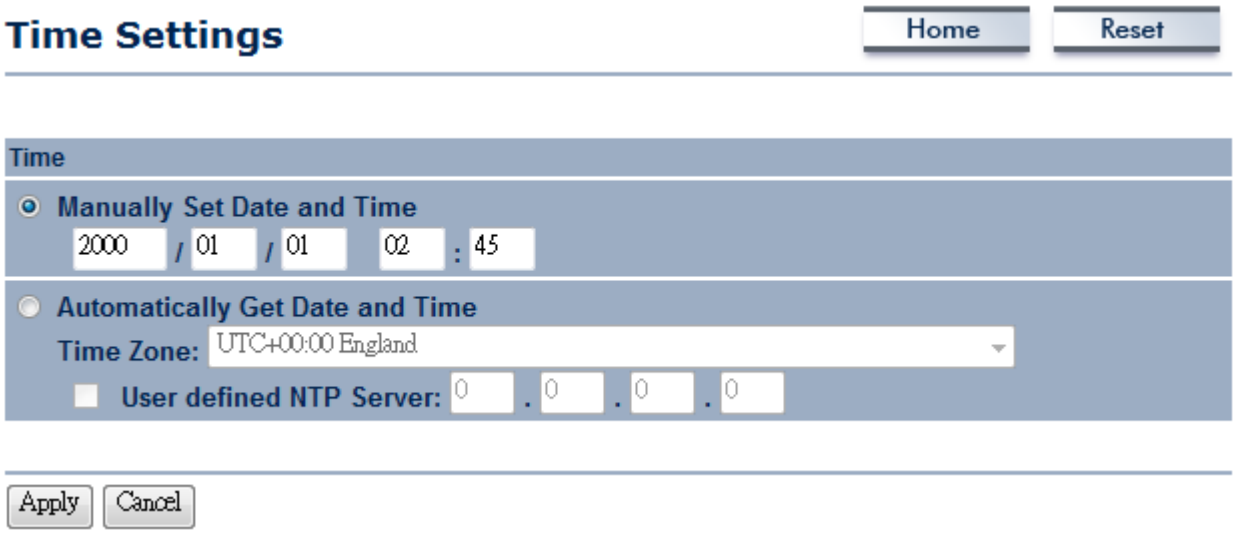
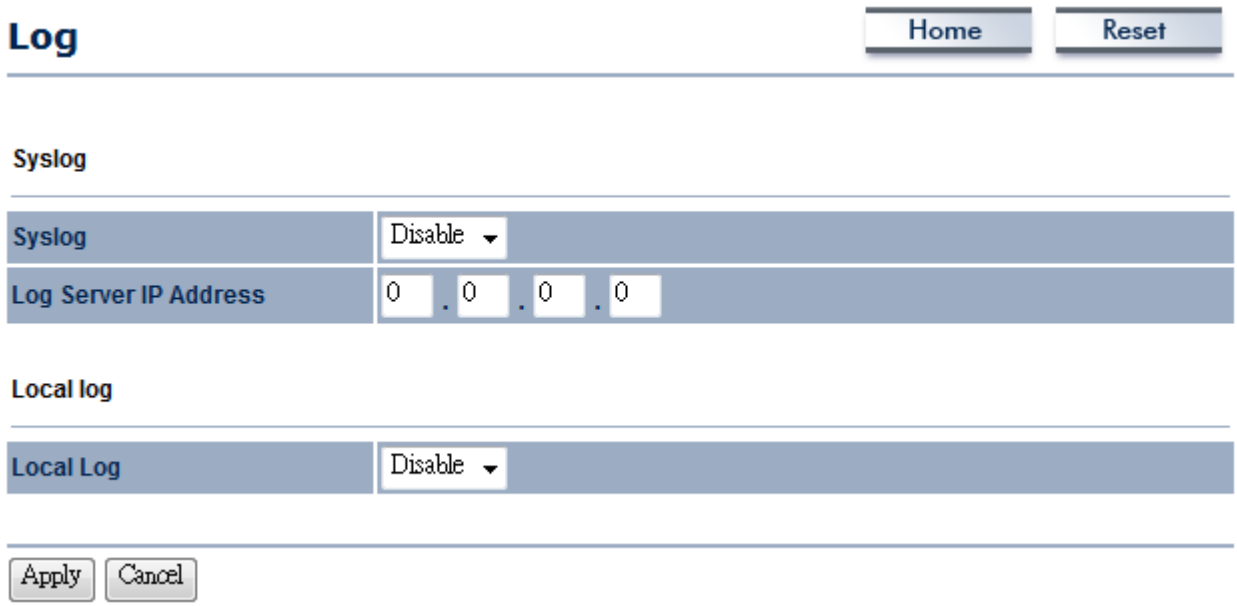


Manually Set Date and Time	Manually setup the date and time.
Automatically Get Date and Time	Specify the Time Zone from the drop down list and Place a **Check** to specify the IP address of the NTP Server manually or uses default NTP Server.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

7.7 Log

Click on the **Log** link under the **Management** menu. The **Log** page displays a list of events that are triggered on the Ethernet and Wireless interface. This log can be referred when an unknown error occurs on the system or when a report needs to be sent to the technical support department for debugging purposes.



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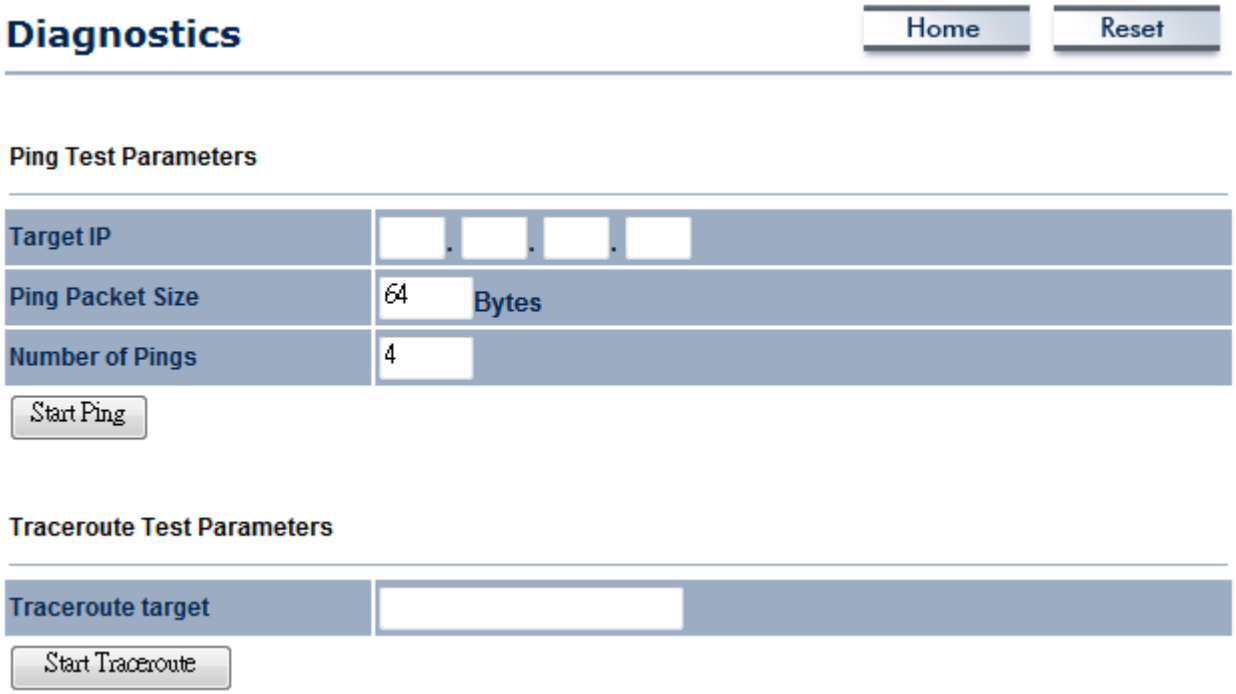
Syslog	Select Enable or Disable Syslog function from the drop down list.
Log Server IP Address	Specify the Log Server IP address.
Local Log	Select Enable or Disable Local Log service.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

7.8 Diagnostics

Click on the **Diagnostics** link under the **Management** menu. This function allows you to detect connection quality and trace the routing table to the target.



Target IP	Specify the IP address you would like to search.
Ping Packet Size	Specify the packet size of each ping.
Number of Pings	Specify how many times of ping.
Start Ping	Press Start Ping to begin.
Traceroute Target	Specify an IP address or Domain name you would like to trace.
Start Traceroute	Press Start Traceroute to begin.

7.9 LED Control

LED Control is used to turn off the LED light of the device without damaging the device. Management tools can also control this function remotely.

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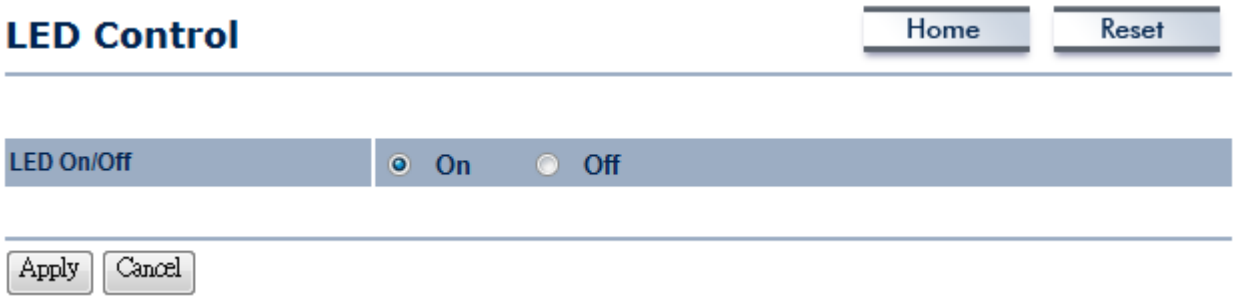

LED On/Off	Select the Radio button to turn on or off the LED light.
Apply / Cancel	Press **Apply** to apply the changes or **Cancel** to return previous settings.

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8 Network Configuration Example

This chapter describes the role of the M36 with three different modes. The Access Point mode's default configuration is a central unit of the wireless network or as a root device of the wired environment. Repeater mode and Mesh network mode need future configuration.

8.1 Access Point

Access Point

Step1	Login to the web-based configuration interface with default IP 192.168.1.1
Step2	Select your country or region's regulation.
Step3	Select 802.11b or 802.11g as your wireless mode.
Step4	Use site survey to scan channels that have been used in nearby area.
Step5	Select channel with less interferences.
Step6	Specify the SSID for your broadcast SSID and you can also configure multiple SSID at the same time.
Step7	Verify VLAN identifier to separate services among clients
Step8	Setup the authentication settings.
Step9	Press Apply to save all changes.

Note: For more advanced settings, please refer to the previous chapters.

Wireless Client

Step1	Select wireless mode you would like to associate with.
Step2	Use site survey to scan nearby Access Point and select the certain AP you would like to connect with or enter SSID manually.

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Step3	Configure VLAN ID in your wireless device if available.
Step4	Select correct authentication type and password.

Auction: Wireless Client IP address must configure manually at the same subnet in Local Area Network or enable DHCP server of M36 to retrieve IP automatically.

8.2 Repeater Mode

AP Repeater is used to extend the wireless coverage area of the Access Point. Please refer to the previous section to configure the Access Point.

Repeater

Step1	Login to the web-based configuration interface with default IP 192.168.1.1
Step2	Select your country or region's regulation.
Step3	Change device mode to Repeater from system properties.
Step4	Select wireless mode you would like to associate with.
Step5	Select channel/frequency you would like to associate with.
Step6	Use site survey to scan nearby Access Point and select the certain AP you would like to connect with or enter SSID manually.
Step7	Select correct authentication type and password the same as Access Point.
Step8	Enable Prefer BSSID for automatically reconnected.

Note(1): For more advanced settings, please refer to the previous chapters.

Note(2): Repeater IP subnet must the same as the Access Point, please refer to the **IP Settings** section for details.

Wireless Client

Step1	Select wireless mode you would like to associate with.
Step2	Use site survey to scan nearby Access Point and select the certain AP you would like to connect with or enter SSID manually.
Step3	Configure VLAN ID in your wireless device if available.

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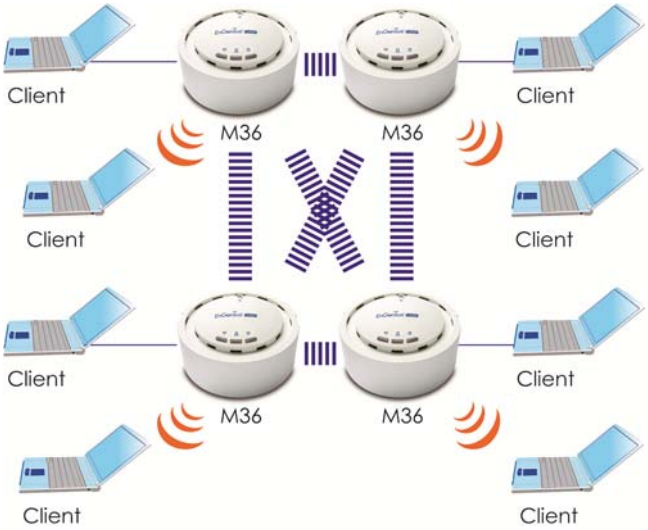
Step4	Select correct authentication type and password.

Auction: Wireless Client IP address must configure manually at the same subnet in Local Area Network or enable DHCP server of M36 to retrieve IP automatically.

8.3 Mesh

In order to construct the Mesh Network, the following configuration must be the same.



Mesh

Step1	Login to the web-based configuration interface with default IP 192.168.1.1
Step2	Select your country or region's regulation.
Step3	Change device mode to Mesh from system properties.
Step4	Select wireless mode you would like to associate with.
Step5	Select channel/frequency you would like to associate with.
Step6	Specify SSID for the Mesh Network.
Step7	Setup the authentication settings.
Step8	Specify current device is a gateway or relay.
Step9	Press Apply to save all changes.

Note(1): Non-M36 product may find difficulty of configuration.

Note(2): In Mesh Mode, recommended 1 Gateway with 4 Relay Linear and radiative deployment scenario.

Access Point

Step1	Specify the SSID for your broadcast SSID and you can also configure multiple SSID at the same time.
Step3	Setup the authentication settings.
Step4	Press Apply to save all changes.

Note: For more advanced settings, please refer to the previous chapters.

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Wireless Client

Step1	Select wireless mode you would like to associate with.
Step2	Use site survey to scan nearby Access Point and select the certain AP you would like to connect with or enter SSID manually.
Step3	Configure VLAN ID in your wireless device if available.
Step4	Select correct authentication type and password.

Auction: Wireless Client IP address must configure manually at the same subnet in Local Area Network or enable DHCP server of M36 to retrieve IP automatically.

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Appendix A – FCC Interference Statement

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.